# DOCUMENT RESUME

ED 042 615 SE 009 305

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|---|---|
| AUTHOR | Hubbard, Alfred W., Ed.; Weiss, Raymond A., Ed. |
| TITLE | Completed Research in Health, Physical Education, and Recreation Including International Sources, Volume 6, 1964 Edition |
| INSTITUTION | American Association for Health, Physical Education, and Recreation, Washington, D.C. |
| PUB DATE | 64 |
| NOTE | 124p. |
| AVAILABLE FRCM | American Assoc. for Health, Physical Education, and Recreation, NEA, 1201 16th St., N.W., Washington, D.C. 20036 ($2.00) |
| EDRS PRICE | EDRS Price MF-$0.50 HC Not Available from EDRS. |
| DESCRIPTORS | *Annotated Bibliographies, *Health Education, *Physical Education, *Recreation, *Research Reviews (Publications) |

ABSTRACT

This document is a compilation of completed research in the areas of health, physical education, recreation and allied areas for the year 1963. It is arranged in three parts. Part I consists of an index showing cross references for all the listings in parts II and III. Part II consists of a bibliography listing published research and the periodicals reviewed. Part III consists of listings and abstracts of unpublished masters and doctoral theses for thirty-eight graduate programs of health, physical education, recreation and allied areas. There is a total of 558 listings to the journals and 390 references to masters and doctoral theses. Abstracts are provided for a majority of the theses. (HB)

## Volume 6

## 1964

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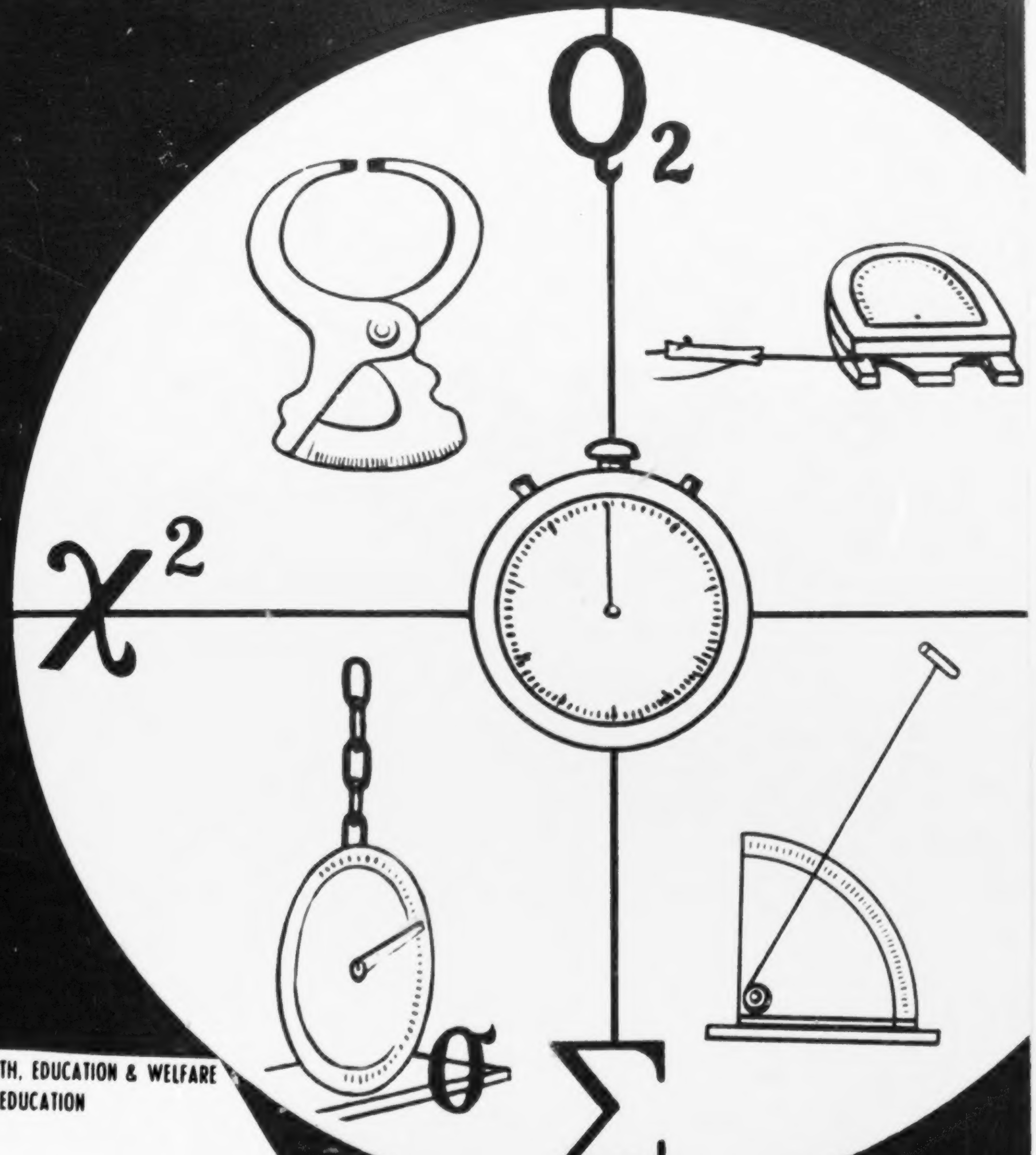

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INCLUDING INTERNATIONAL SOURCES

**PROFESSIONALLY DEDICATED** to the International Council on Health, Physical Education, and Recreation by its United States member, the American Association for Health, Physical Education, and Recreation, to share this compilation with other member organizations of ICHPER and thus to extend knowledge in these fields. This annual volume is published in keeping with ICHPER's objective of exchanging research among professional workers throughout the world and furthering advancement in health, physical education, and recreation. It is hoped it will supplement the *Revue Analytique D'Education Physique et Sportive*, published by the Documentation and Information Bureau in cooperation with the International Council on Sports and Physical Education, under the direction of Julien Falize, who is a member of the ICHPER Executive Committee.

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## in Health, Physical Education, and Recreation

INCLUDING INTERNATIONAL SOURCES

**VOLUME 6 1964 EDITION**

**covering research completed in 1963**

Edited by **ALFRED W. HUBBARD** and **RAYMOND A. WEISS**
for the RESEARCH COUNCIL of the AMERICAN ASSOCIATION
FOR HEALTH, PHYSICAL EDUCATION, AND RECREATION,
a department of the National Education Association

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Library of Congress Catalog Card No. 59-15820

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A Department of the National Education Association
1201 Sixteenth Street, N. W., Washington, D. C. 20036

Note: Volumes 1, 2, 3, 4, and 5 of Completed Research in Health, Physical Education, and Recreation are available from AAHPER for $1.50 each.

# INTRODUCTION

This compilation lists research completed in the areas of health, physical education, recreation, and allied areas during 1963. It is arranged in three parts:

I. Index. In this section, cross references are given for all the listings in Parts II and III. References are arranged under the subject headings, which are in alphabetical order. Instructions for using the index are given at the top of page 1.
II. Bibliography. This is a listing of published research, citing articles published in 122 of the 194 periodicals reviewed by the Committee for Completed Research. The periodicals reviewed are listed on pages 112-114.
III. Unpublished Masters' and Doctors' Theses for 38 graduate programs of health, physical education, recreation, and allied areas. Institutions reporting are listed on page 115. Most references are accompanied by abstracts of the research and all are numbered in alphabetical order. Names of institutional representatives sending in these abstracts are indicated in parentheses after the name of the institution.

Theses abstracts are sent in by the institutional representatives, and are then organized, indexed, and edited by the chairmen of the Committee for Completed Research. Universities and colleges are encouraged to submit abstracts of theses completed at their institutions in the year 1964 for inclusion in the next issue of Completed Research. Material should be sent to the chairmen of the Committee on Completed Research.

The Research Council of the American Association for Health, Physical Education, and Recreation dedicate Volume 6 of Completed Research in Health, Physical Education, and Recreation to Margaret S. Poley in grateful appreciation for her scholarly contributions to the Council and the Association. With her customary quiet devotion to her professional responsibilities, Dr. Poley managed to assemble and abstract the current thesis materials from the University of Oregon with the help of friends while hospitalized in her terminal illness.

The Council and Association also wish to express their appreciation for the valuable assistance of Edna Willis and Carl Haven Young, who, until their retirement this year, have contributed thesis materials annually from the University of Colorado and the University of California, Los Angeles.

Alfred W. Hubbard
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# Part I - INDEX

This Index enables the reader to refer to the items of completed research listed in Parts II and III. Research topics are arranged in alphabetical order. The reference numbers following each topic correspond to the listings of completed research dealing with that topic. The capital letter B indicates a reference to be found in the Bibliography (Part II); the capital letter T indicates a reference to be found in the Theses Abstracts (Part III). The numbers indicate the order in which items are arranged in each part.

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1. ABRAMS, Irving. "Evaluation of Tape Recording of Heart Sounds on a Mass Scale in School Children." Journal of School Health 33: 62-69; Feb. 1963.
2. ACHESON, Roy M., and others. "Studies in the Reliability of Assessing Skeletal Maturity from X-Rays." Human Biology 35: 317-49; Sept. 1963.
3. ADAMS, Oscar S., and CHILES, W. Dean. "Prolonged Human Performance as a Function of the Work-Rest Cycle." Aerospace Medicine 34: 132-38; Feb. 1963.
4. ADAMS, R. S. "Two Scales for Measuring Attitude Toward Physical Education." Research Quarterly 34: 91-94; March 1963.
5. ALEXANDER, John F., and others. "Comparison of the Ice Hockey Wrist and Slap Shots for Speed and Accuracy." Research Quarterly 34: 259-66; Oct. 1963.
6. ALLEN, T. H. "Measurement of Human Body Fat: A Quantitative Method Suited for Use by Aviation Medical Officers." School of Aerospace Medicine Technical Documentary Report No. SAM-TDR-63-45: 5; June 1963.
7. Allen, Thomas. "Measurement of Human Body Fat." Aerospace Medicine 34: 907-909; Oct. 1963.
8. ANDERSEN, K. Lange, and HART, J. S. "Aerobic Working Capacity of Eskimos." Journal of Applied Physiology 18: 764-68; July 1963.
9. ANDERSON, K. Lange, and others. "Metabolic and Thermal Response of Eskimos During Muscular Exertion in the Cold." Journal of Applied Physiology 18: 613-18; May 1963.
10. ANDERSON, Margaret; GREEN, William T.; and MESSNER, Marie Blais. "Growth and Predictions of Growth in the Lower Extremities." Journal of Bone and Joint Surgery 45A: 1-14; Jan. 1963.
11. ANLIKER, James. "Variations in Alpha Voltage of the Electroencephalogram and Time Perception." Science 140: 1307-309; June 1963.
12. ANONYMOUS. "Physical Stress and Capillary Damage." Citrus in Medicine 2: 4; Aug. 1963.
13. ANSTALL, H. B. "Some Considerations of Changes in Total Body Composition in Relation to Nutritional Status." Proceedings of the Nutrition Society 22: 60-66; 1963.
14. ARCHIBALD, Kenneth C. "Problems in Diagnosing Progressive Muscular and Neuromuscular Diseases." Archives of Physical Medicine and Rehabilitation 44: 353-59; July 1963.
15. ASHTON, C. Heather, and McHARDY, G. J. R. "A Rebreathing Method for Determining Mixed Venous $PCO_2$ during Exercise." Journal of Applied Physiology 18: 668-71; May 1963.
16. ASMUSSEN, Erling, and others. "The Neurogenic Factors in the Regulation of Respiration and Circulation During Muscular Exercise." Acta Physiologica Scandinavica 59, Supplementum 213: 19-20; 1963.
17. ASPREY, Gene M.; ALLEY, Louis E.; and TUTTLE, W. W. "Effect of Eating at Various Times on Subsequent Performances in the 440-Yard and Half-Mile Run." Research Quarterly 34: 267-70; Oct. 1963.
18. ÅSTRAND, Irma. "Lactate Content in Sweat." Acta Physiologica Scandinavica 58: 359-67; Aug. 1963.
19. ÅSTRAND, P. O., and others. "Blood Lactates After Prolonged

Severe Exercise." Journal of Applied Physiology 18: 619-22; May 1963.

20. ÅSTRAND, P. O., and others. "Girl Swimmers With Special Reference to Respiratory and Circulatory Adaptation and Gynaecological and Psychiatric Aspects." Acta Paediatrica 52: 602-603; Nov. 1963.

21. ATKINS, A. R., and NICHOLSON, J. D. "An Accurate Constant-Work-Rate Ergometer." Journal of Applied Physiology 18: 205-208; Jan. 1963.

22. AUCHINCLOSS, J. Howland, Jr.; SIPPLE, John; and GILBERT, Robert. "Effect of Obesity on Ventilatory Adjustment to Exercise." Journal of Applied Physiology 18: 19-24; Jan. 1963.

23. AUSTIN, G.; RATIULLAH, M.; and HAYWARD, W. "Physiologic Aspects of Sensory Discrimination." Surgery 54: 171-81; July 1963.

24. BADER, Mortimer E., and others. "Changes in Lung Volumes during Breathing Negative Pressure Continuously, During Inspiration Only and During Expiration Only." Journal of Laboratory and Clinical Medicine 62: 31-39; July 1963.

25. BAINES, A. H. J., and HOLLINGSWORTH, D. F. "Diets of the Working-Class Families with Children Before and After the Second World War." Nutrition Abstracts and Reviews 33: 653-68; July 1963.

26. BAKAN, P., and THOMPSON, R. "Attention and Kinesthetic After-Effects." American Journal of Psychology 76: 39-48; March 1963.

27. BAKER, Benjamin M., and others. "The National Diet-Heart Study; an Initial Report." Journal of the American Medical Association 185: 105-106; July 1963.

28. BALKE, Bruno. "A Simple Field Test for the Assessment of Physical Fitness." Report 63-6. Oklahoma City: Federal Aviation Agency; April 1963.

29. BARD, Gregory. "Energy Expenditure of Hemiplegic Subjects During Walking." Archives on Physical Medicine and Rehabilitation 44: 368-70; July 1963.

30. BASMAJIAN, John V. "Control and Training of Individual Motor Units." Science 141: 440-41; Aug. 1963.

31. BASMAJIAN, John V., and STECKO, George. "The Role of Muscles in Arch Support of the Foot." Journal of Bone and Joint Surgery 45A: 1184-90; Sept. 1963.

32. BECHTOL, Charles O. "The Use of a Simulated Body Form for Testing the Qualities of a Firm Mattress." Archives of Physical Medicine and Rehabilitation 44: 445-47; Aug. 1963.

33. BECK, C. H. M. "Paced and Self-Paced Serial Simple Reaction Time." Canadian Journal of Psychology 17: 90-97; March 1963.

34. BECKER, Paul W.; MUSSINA, Carolyn M.; and PERSONS, Roy W. "Intertrial Interval, Delay of Knowledge of Results, and Motor Performance." Perceptual and Motor Skills 17: 559-63; Oct. 1963.

35. BECKERMAN, Stanley. "Cigarette Smoking Among High School Students." Journal of Maine Medical Association 54: 60-64; March 1963.

36. BEHNKE, Alber R. "Anthropometric Estimate of Body Size, Shape, and Fat Content." Postgraduate Medicine 34: 190-98; Aug. 1963.

37. BELISLE, James J. "Accuracy, Reliability, and Refractoriness in a Coincidence-Anticipation Task." Research Quarterly 34: 271-81; Oct. 1963.

38. BELKIN, Marvin, and others. "Evaluation of Hearing Testing Program in New York City Elementary Schools." Public Health Reports 78: 681-88; Aug. 1963.

39. BELMONT, Lillian, and BIRCH, Herbert G. "Lateral Dominance and Right-Left Awareness in Normal Children." Child Development 34; No. 2: 257-70; June 1963.

40. BENDER, Jay A., and KAPLAN, Harold M. "The Multiple Angle Testing Method for the Evaluation of Muscle Strength." *Journal of Bone and Joint Surgery* 45A: 135-40; Jan. 1963.
41. BENNETT, Charles G.; TOKUYAMA, George H.; and BRUYERE, Paul T. "Health of Japanese Americans in Hawaii." *Public Health Reports* 78: 753-62; Sept. 1963.
42. BERGER, Richard A. "Classification of Students on the Basis of Strength." *Research Quarterly* 34: 514-15; Dec. 1963.
43. BERGER, Richard A. "Comparative Effects of Three Weight Training Programs." *Research Quarterly* 34: 396-98; Oct. 1963.
44. BERGER, Richard A. "Comparison Between Static Training and Various Dynamic Training Programs." *Research Quarterly* 34: 131-35; May 1963.
45. BERGER, Richard A. "Comparison of Weight Lifting Ability Between Lifters." *Physical Educator* 20: 59-60; May, 1963.
46. BERGER, Richard A., and RAPP, Donald. "Effects of Dynamic and Static Training on Vertical Jumping Ability." *Research Quarterly* 34: 419-24; Dec. 1963.
47. BERRY, J. N., and DESHMUK, H. "Physique of Male College Students in Nagpur." *Indian Journal of Medical Research* 51: 313-26; March 1963.
48. BEVEGARD, Sture. "The Effect of Cardioacceleration by Methyl-Scopolamine Nitrate on the Circulation at Rest and During Exercise in Supine Position with Special Reference to the Stroke Volume." *Acta Physiologica Scandinavica* 57: 61-80; Jan.-Feb. 1963.
49. BEVEGARD, S.; HOLMGREN, A.; and JONSSON, B. "Circulatory Studies in Well Trained Athletes at Rest and During Heavy Exercise, with Special Reference to Stroke Volume and the Influence of Body Position." *Acta Physiologica Scandinavica* 57: 26-50; Jan.-Feb. 1963.
50. BHATTACHARYA, Ashim Kumar, and SACHIDANANDA, Banerjec. "Body Surface Area of Adult Males of Rajasthan." *Indian Journal of Medical Research* 51: 358-60; March 1963.
51. BHATTACHARYA, Ashim Kumar, and SACHIDANANDA, Banerjec. "The Energy Intake and Energy Expenditure of Male Medical College Students of Rajasthan." *Indian Journal of Medical Research* 51: 350-57; March 1963.
52. BHATTACHARYA, D. K. "Vital Capacity of the Jat Males of Punjab; Modification of the Formulae Existing for Its Computation." *Indian Journal of Medical Research* 51: 361-65; March 1963.
53. BHATTATHIRA, E. D. M., and others. "Feedback Control of Cholesterol Synthesis in Man." *Journal of Clinical Investigation* 42: 1613-18; Oct. 1963.
54. BICKELMANN, Albert G., and others. "The Response of the Normal and Abnormal Heart to Exercise." *Circulation* 28: 238-50; Aug. 1963.
55. BIERMAN, William, and others. "Respiratory and Metabolic Changes During Passive and Active Movement of the Lower Extremities." *Archives of Physical Medicine and Rehabilitation* 44: 560-64; Oct. 1963.
56. BIRREN, J. E. "Research on the Psychological Aspects of Aging." *Geriatrics* 18: 393-403; May 1963.
57. BIRREN, James E.; CARDON, Philippe V., Jr.; and PHILLIPS, Shirley L. "Reaction Time as a Function of the Cardiac Cycle in Young Adults." *Science* 140: 195-96; April 1963.
58. BISHOP, J. M., and others. "Relationships Between Cardiac Output and Rhythm, Pulmonary Vascular Pressures, and Disability in Mitral Stenosis." *Clinical Science* 24: 391-404; June 1963.
59. BLACK, S., and others. "The Effect of Suggestion under Hypnosis on Peripheral Circulation in Man." *Clinical Science* 25: 223-30; Oct. 1963.

60. BLEIBERG, Nina; JACOBZINER, Harold; and MAHONEY, Isabel. "Health Supervision of Young Children in New York City." New York State Journal of Medicine 63: 3255-60; Nov. 1963.
61. BLUM, Henrik L., and others. "A Tuberculin-Testing Survey of a School Age Population in Eleven Areas in California." American Review of Respiratory Diseases 87: 181-99; Feb. 1963.
62. BOCK, Arlie V. "The Circulation of a Marathoner." Journal of Sports Medicine and Physical Fitness 3: 8-86; June-Sept. 1963.
63. BOHR, David F. "Vascular Smooth Muscle: Dual Effect of Calcium." Science 139: 597-99; Feb. 1963.
64. BOLIN, Hjalmar. "Method for Exact Roentgen-Diagnosis of Ankle Injuries." Acta Chirurgica Scandinavica 125: 503-504; May 1963.
65. BOVYER, George. "Children's Concepts of Sportsmanship in the Fourth, Fifth, and Sixth Grades." Research Quarterly 34: 282-87; Oct. 1963.
66. BOYER, Samuel H.; FAINER, David C.; and NAUGHTON, Michael A. "Myoglobin: Inherited Structural Variation in Man." Science 140: 1228-31; June 1963.
67. BOYLE, Robert W., and others. "A Study of 480 Consecutive Cases of Cerebral Vascular Accidents." Archives of Physical Medicine and Rehabilitation 44: 19-28; Jan. 1963.
68. BRADLEY, J. J. "Severe Localized Pain Associated with the Depressive Syndrome." British Journal of Psychiatry (J. of Mental Science) 109: 741-45; Nov. 1963.
69. BRANNON, Earl W.; ROCKWOOD, Charles A., Jr.; and POTTS, Pauline. "The Influence of Specific Exercises in the Prevention of Debilitating Musculoskeletal Disorders; Implication in Physiological Conditioning for Prolonged Weightlessness." Aerospace Medicine 34: 900-906; Oct. 1963.
70. BRIGGS, Norman F., and FUCHS, Franklin. "The Nature of the Muscle-Relaxing Factor." Journal of General Physiology 46: 883-91; May 1963.
71. BRINKMAN, Geoffrey L., and COATES, E. Osborne, Jr. "The Effect of Bronchitis, Smoking, and Occupation on Ventilation." American Review of Respiratory Diseases 87: 684-93; May 1963.
72. BRITISH TUBERCULOSIS ASSOCIATION. "Smoking Deterrent Study." British Medical Journal 486-88; Aug. 1963.
73. BROD, J., and others. "Metabolic Changes in the Forearm Muscle and Skin During Emotional Muscular Vasodilation." Clinical Science 25: 1-10; Aug. 1963.
74. BRONNER, F., and others. "Quantitation of Calcium Metabolism in Postmenopausal Osteoporosis and in Scoliosis." Journal of Clinical Investigation 42: 898-905; June 1963.
75. BROSTROM, L.; LILJEDAHL, S. O.; and LINDVALL, N. "The Diagnosis of Ligament Injuries about the Ankle Joint." Acta Chirurgica Scandinavica 125: 506-507; May 1963.
76. BROUHA, Lucien, and others. "Discrepancy Between Heart Rate and Oxygen Consumption During Work in the Warmth." Journal of Applied Physiology 18: 1095-98; Nov. 1963.
77. BROUSSARD, M. J. "Evaluation of Citrus Bioflavonoids in Contact Sports." Citrus in Medicine 2: 1-2; Oct. 1963.
78. BROWN, J. R., and CROWDEN, G. P. "Energy Expenditure Ranges and Muscular Work Grades." British Journal of Industrial Medicine 20: 277-83; Oct. 1963.
79. BROWN, John R., and others. "Swimming Pools and Bathing Places in Southern Ontario." Canadian Journal of Public Health 54: 121-28; March 1963.
80. BRUCE, R. A., and others. "Exercising Testing in Adult Normal Subjects and Cardiac Patients." Pediatrics (Supplement) 32: 742-56; Oct. 1963.

81. BRUGGINK, Gerard M., and SCHNEIDER, Daniel J. "Limits of Seat Belt Protection During Crash Decelerations." Industrial Medicine and Surgery 32: 33-37; Jan. 1963.
82. BRYANT, Howard A., and others. "Group Effectiveness, Coercion, Change, and Coalescence Among Delinquents Compared to Nondelinquents." Journal of Social Psychology 61: 167-77; Oct. 1963.
83. BUCK, Leslie. "Auditory Perception of Position and Speed." Journal of Applied Psychology 47: 177-83; June 1963.
84. BULLEN, B. A.; MONELLO, L. F.; COHEN, H.; and MAYER, J. "Attitudes Toward Physical Activity, Food and Family in Obese and Non-Obese Adolescent Girls." American Journal of Clinical Nutrition 12: 1-11; Jan. 1963.
85. BYRD, Oliver E., and others. "Safety of Iodine as a Disinfectant in Swimming Pools." Public Health Reports 78: 393-97; May 1963.
86. CACERES, C. A., and others. "An Evaluation of Clinical and Laboratory Findings in Male Subjects on Long-Term, Low-Fat, Low-Protein Diets." New England Journal of Medicine 269: 550-65; Sept. 1963.
87. CALDWELL, A. B., and others. "Weight Reduction and Serum Cholesterol Levels." American Journal of Clinical Nutrition 12: 401-405; June 1963.
88. CALDWELL, L. S. "Relative Muscle Loading and Endurance." U.S. Army Medical Research Laboratory Report No. 586, Fort Knox, Ky.: 11; 29 July 1963.
89. CALDWELL, L. S. "The Load-Endurance Relationship for a Static Manual Response." U.S. Army Medical Research Laboratory Report No. 573, Fort Knox, Ky.; 1963.
90. CALNAN, C. D. "A New Cream for Covering Skin Blemishes." British Medical Journal 437-38; Feb. 1963.
91. CAMPBELL, Alastair H., and ELDER, Nairne G. "The Effect of Tobacco Smoking on the Course of Chronic Bronchitis." Medical Journal of Australia 2: 9-12; July 1963.
92. CAMPBELL, E. J. M., and others. "The Ability to Distinguish Between Added Elastic and Resistive Loads to Breathing." Clinical Science 24: 201-207; April 1963.
93. CANTRELL, Robert Paul. "Body Balance Activity and Perception." Perceptual and Motor Skills 17: 431-37; Oct. 1963.
94. CARLSON, Francis D.; HARDY, Donna J.; and WILKIE, Douglas R. "Total Energy Production and Phosphocreatine Hydrolysis in the Isotonic Twitch." Journal of General Physiology 46: 851-82; May 1963.
95. CARLSON, Jean. "Effect of Amount and Distribution of Inspection Time and Length of Delay Interval on Kinesthetic After-effect." Journal of Experimental Psychology 66: 377-82; Oct. 1963.
96. CARLSON, Lars A.; EKELUND, Lars-Göran; and ORÖ, Lars. "Studies on Blood Lipids during Exercise: IV. Arterial Concentration of Plasma Free Fatty Acids and Glycerol during and after Exercise in Normal Men." Journal of Laboratory and Clinical Medicine 61: 724-29; May 1963.
97. CASSEL, Russell, and CHILDERS, Richard. "A Study of Certain Attributes of 45 High-School Varsity Football Team Members by Use of Psychological Test Scores." Journal of Educational Research 57: 64-67; Oct. 1963.
98. CAUFFMAN, Joy G. "Appraisal of the Health Behavior of Junior High School Students." Research Quarterly 34: 425-30; Dec. 1963.
99. CAVAGNA, G. A.; SAIBENE, E. P.; and MARGARIA, R. "External Work in Walking." Journal of Applied Physiology 18: 1-9; Jan. 1963.
100. CHAFFEE, William R., and others. "The Effect of Exercise on Pulmonary Blood Volume." American Heart Journal 66: 657-63; Nov. 1963.

101. CHAILLEY, Bert P. "The Integrative Action of Man's Spinal Cord." Journal of Sports Medicine and Physical Fitness 3: 126-30; June-Sept. 1963.

102. CHAVALIER, Robert B., and others. "Circulatory and Ventilatory Effects of Exercise in Smokers and Nonsmokers." Journal of Applied Physiology 18: 357-60; March 1963.

103. CHURCH, Russel M.; MILLWARD, R. B.; and MILLER, P. "Prediction of Success in a Competitive Reaction Time Situation." Journal of Abnormal and Social Psychology 67: 234-40; Sept. 1963.

104. CLARK, R. Ernest; and FLAHERTY, Charles F. "Contralateral Effects of Thermal Stimuli on Manual Performance Capability." Journal of Applied Physiology 18: 769-71; July 1963.

105. CLARKE, David H. "Effect of Immersion in Hot and Cold Water Upon Recovery of Muscular Strength Following Fatiguing Isometric Exercise." Archives of Physical Medicine and Rehabilitation 44: 565-68; Oct. 1963.

106. CLARKE, H. Harrison, and GREEN, Walter H. "Relationships Between Personal-Social Measures Applied to 10-Year-Old Boys." Research Quarterly 34: 288-98; Oct. 1963.

107. CLEMMESEN, Svend, and others. "Air-Conditioning and Human Comfort." Danish Medical Bulletin 10: 217-24; Oct. 1963.

108. CLIFTON, Marguerite A., and SMITH, Hope M. "Comparison of Expressed Self-Concepts of Highly-Skilled Males and Females Concerning Motor Performance." Perceptual and Motor Skills 16: 199-201; Feb. 1963.

109. COBB, Leonard A., and others. "Hemodynamic Relationships of Anaerobic Metabolism and Plasma Free Fatty Acids During Prolonged, Strenuous Exercise in Trained and Untrained Subjects." Journal of Clinical Investigation 42: 800-10; June 1963.

110. COFFMAN, Jay D., and JAVETT, Stanley L. "Blood Flow in the Human Calf during Tobacco Smoking." Circulation 28: 932-37; Nov. 1963.

111. COHEN, Jacob, and HEIMANN, Robert K. "Heavy Smokers with Low Mortality and the Urban Factor in Lung Cancer Mortality." Industrial Medicine and Surgery 32: 415-25; Oct. 1963.

112. COHN, J. E., and others. "Mechanical Properties of Lung in Normal Men over 60 Years Old." Journal of Clinical Investigation 42: 1406-10; Sept. 1963.

113. COLACHIS, S. C., Jr., and others. "Movement of the Sacroiliac Joint in the Adult Male: Preliminary Report." Archives of Physical Medicine and Rehabilitation 44: 490-98; Sept. 1963.

114. COLE, Nyla J., and others. "Socio-Economic Adjustment of a Sample of Schizophrenic Patients." American Journal of Psychiatry 120: 465-71; Nov. 1963.

115. COLEMAN, James C.; KEOGH, Jack F.; and MANSFIELD, John. "Motor Performance and Social Adjustment Among Boys Experiencing Serious Learning Difficulties." Research Quarterly 34: 516-17; Dec. 1963.

116. COMMITTEE ON THE MEDICAL ASPECTS OF SPORTS. "Survey of Status of Team Physicians in the United States." Journal of the American Medical Association 184: 981-84; June 1963.

117. CONSOLE, O. M. "A Study of Sanitary Conditions in Bottled Water Cooling Dispensers." Journal of Environmental Health 25: 326-38; March-April 1963.

118. COOKSEY, Evelyn B., and OJEMANN, Ralph H. "Why Do They Skip Breakfast?" Journal of Home Economics 55: 43-45; Jan. 1963.

119. COPPEN, Alec, and KESSEL, Neil. "Menstruation and Personality." British Journal of Psychiatry (Journal of Mental Science) 109: 711-21; Nov. 1963.

120. CORTES, Felix M. "Acute Atrial Overloading, A Response to Stress." *American Journal of the Medical Sciences* 246: 443-50; Oct. 1963.
121. COSTELLO, C. G., and SMITH, C. M. "The Relationships Between Personality, Sleep, and the Effects of Sedatives." *British Journal of Psychiatry* (Journal of Mental Science) 109: 568-71; July 1963.
122. COTES, J. E., and others. "Effect of Breathing $O_2$ Upon Cardiac Output; Heart Rate; Ventilation." *Clinical Science* 25: 305-21; Oct. 1963.
123. COTLAR, Alvin M.; THRASHER, J. P.; and HARRIS, A. Sidney. "Effect of Muscle Length on Denervation Atrophy." *Journal of Bone and Joint Surgery* 45A: 1234-40; Sept. 1963.
124. CRADDICK, Ray A., and STERN, Michael R. "Effect of Pre- and Post-Stress upon Height of Drawings in a Perceptual-Motor Task." *Perceptual and Motor Skills* 17: 283-85; Aug. 1963.
125. CRAIG, A. B., Jr. "Evaluation and Predictions of World Running and Swimming Records." *Journal of Sports Medicine and Physical Fitness* 3: 14-21; March 1963.
126. CRAIG, Albert B., Jr. "Heart Rate Responses to Apneic Underwater Diving and to Breath Holding in Man." *Journal of Applied Physiology* 18: 854-62; Sept. 1963.
127. CRAIG, F. N.; and CUMMINGS, E. G. "Slowing of the Heart at the Beginning of Exercise." *Journal of Applied Physiology* 18: 353-56; March 1963.
128. CRAIG, F. N.; CUMMINGS, E. G.; and BLEVINS, W. V. "Regulation of Breathing at Beginning of Exercise." *Journal of Applied Physiology* 18: 1183-87; Nov. 1963.
129. CRAIG, L. S., and others. "Chorionic Gonadotropin in the Treatment of Obese Women." *American Journal of Clinical Nutrition* 12: 230-34; March 1963.
130. CRATTY, Bryant J. "Comparisons of Verbal-Motor Performance and Learning in Serial Motor Tasks." *Research Quarterly* 34: 431-39; Dec. 1963.
131. CRATTY, Bryant J. "Recency Versus Primacy in a Complex Gross Motor Task." *Research Quarterly* 34: 3-8; March 1963.
132. CRATTY, Bryant J., and DENSMORE, Ann E. "Activity During Rest and Learning a Gross Movement Task." *Perceptual and Motor Skills* 17: 250; Aug. 1963.
133. CRAWFORD, A. "The Overtaking Driver." *Ergonomics* 6: 153-70; April 1963.
134. CRAWFORD, A. "The Perception of Light Signals: The Effect of Mixing Flashing and Steady Irrelevant Lights." *Ergonomics* 6: 286-94; July 1963.
135. CREAK, E. Mildred. "Childhood Psychosis." *British Journal of Psychiatry* (Journal of Mental Science) 109: 84-89; Jan. 1963.
136. CROFTON, Eileen, and CROFTON, John. "Influence of Smoking on Mortality from Various Diseases in Scotland and in England and Wales." *British Medical Journal* 1161-64: Nov. 1963.
137. CUDDY, T.; STENBERG, J.; ÅSTRAND, P. O.; and SALTIN, B. "Cardiac Output during Submaximal and Maximal Exercise." *Acta Physiologica Scandinavica* 59: 30; Suppl. 213, 1963.
138. CUMMING, Gordon R. "The Heart and Physical Exercise." *Canadian Medical Association Journal* 88: 80-85; Jan. 12, 1963.
139. CUMMING, Gordon R., and DANZINGER, R. "Bicycle Ergometer Studies in Children. II. Correlation of Pulse Rate with Oxygen Consumption." *Pediatrics* 32: 202-208; Aug. 1963.
140. CUMMING, Gordon R., and DANZINGER, R. "Correlation of Pulse Rate with Oxygen Consumption." *Pediatrics* 31: 202-208; Aug. 1963.

141. CURETON, Thomas K. "Improvements in Physical Fitness Associated with a Course of U.S. Navy Underwater Trainees, With and Without Dietary Supplements." *Research Quarterly* 34: 440-53; Dec. 1963.

142. DAHL, E., and others. "Adrenal Cortical Response in Motion Sickness." *Archives of Environmental Health* 7: 92; July 1963.

143. DAILEY, Lucille; WESSEL, Janet A.; and NELSON, Richard C. "Effectiveness of a Bowling Aid to University Bowling Instruction." *Research Quarterly* 34: 136-43; May 1963.

144. DALE, William E., and QUINBY, Griffith E. "Chlorinated Insecticides in the Body Fat of People in the United States." *Science* 142: 593-95; Nov. 1963.

145. DARBY, William J. "Research Developments in International Nutrition." *American Journal of Public Health and the Nation's Health* 53: 1789-94; Nov. 1963.

146. DARK, John, and others. "Relighting of Cigarettes and Lung Cancer." *British Medical Journal* 1164-66; Nov. 1963.

147. DAVIDSON, Harold D., and CAYLER, Glen G. "Oxygen Cost of Breathing in Children." *Journal of Laboratory and Clinical Medicine* 61: 292-301; Feb. 1963.

148. DAVIES, Charles G. "The Families of Severely Mentally Retarded Children; Family Composition and Health." *California Journal of Educational Research XIV*: 121-30; May 1963.

149. DAY, Emerson. "Cancer Screening and Detection: Medical Aspects." *Journal of Chronic Diseases* 16: 397-405; May 1963.

150. DEARBORN, Terry H. "Comparative Class Performances and Gains in Junior College Health Education." *Research Quarterly* 34: 299-304; Oct. 1963.

151. DEARNALEY, E. J. "Estimates of Endurance Under Risky Conditions." *Journal of General Psychology* 68: 243-50; April 1963.

152. DeJONG, R. B. J., and TERPOORTEN, W. "A Modified Muscle Ergograph." *Journal of Applied Physiology* 18: 672; May 1963.

153. DEJOURS, Pierre; KELLOGG, Ralph H.; and PACE, Nello. "Regulation of Respiration and Heart Rate Response in Exercise During Altitude Acclimatization." *Journal of Applied Physiology* 18: 10-18; Jan. 1963.

154. DENNER, B., and others. "Rhythmic Activity and the Perception of Time." *American Journal of Psychology* 76: 287-92; June 1963.

155. DEUPREE, R. H., and SIMON, J. R. "Reaction Time and Movement Time as a Function of Age, Stimulus Duration, and Task Difficulty." *Ergonomics* 6: 403-11; Oct. 1963.

156. DEUTSCH, Felix. "Analytic Posturology and Synesthesiology." *Psychoanalysis and Psychoanalytic Review* 50: 40-67; Spring 1963.

157. deVRIES, Herbert A. "The 'Looseness' Factor in Speed and Oxygen Consumption of an Anaerobic 100-Yard Dash." *Research Quarterly* 34: 305-13; Oct. 1963.

158. deVRIES, Herbert A., and GRAY, David E. "Aftereffects of Exercise Upon Resting Metabolic Rate." *Research Quarterly* 34: 314-21; Oct. 1963.

159. DICK, R. D. "Formation and Generalization of Concepts as a Function of Similarity and Amount of Training." *American Journal of Psychology* 76: 607-15; Dec. 1963.

160. DILL, D. B. "The Influence of Age on Performance as Shown by Exercise Tests." *Pediatrics* 32 (Suppl.): 737-41; Oct. 1963.

161. DIMOND, George E. "Hyperextension, Body Weight, and Coronary Heart Disease." *Archives of Internal Medicine* 112: 550-54; Oct. 1963.

162. DOBBINS, D. A.; TIEDEMANN, J. G.; and SKORDAHL, D. M. "Vigilance under Highway Driving Conditions." *Perceptual and*

Motor Skills 16: 38; Feb. 1963.

163. DODGE, Arnold H. "The 1962 Civil Defense Emergency Hospital Program." New York State Journal of Medicine 63: 3144-46; Nov. 1963.

164. DOLMAN, C. E., and IIDA, H. "Type E Botulism; Its Epidemiology, Prevention, and Treatment." Canadian Journal of Public Health 54: 293-308; July 1963.

165. DUNNET, W. Nicholson. "Infectious Mononucleosis." British Medical Journal 1187-91; May 1963.

166. DUNNING, Gordon M. "Radioactivity in the Diet." Journal of American Dietetic Association 42: 17-28; Jan. 1963.

167. DUSTMAN, Robert E., and BECK, Edward C. "Long-Term Stability of Visually Evoked Potentials in Man." Science 142: 1480-81; Dec. 1963.

168. DZENOWAGIS, Joseph D. "Prevalence of Certain Dangerous Safety Misconceptions Among a Group of Sixth Grade Children." Journal of School Health 33: 26-31; Jan. 1963.

169. EASON, Robert G. "Relation Between Effort, Tension Level, Skill, and Performance Efficiency in a Perceptual-Motor Task." Perceptual and Motor Skills 16: 297-317; April 1963.

170. EASON, Robert G., and BRANKS, Joseph. "Effect of Level of Activation on the Quality and Efficiency of Performance of Verbal and Motor Tasks." Perceptual and Motor Skills 16: 525-43; April 1963.

171. EBSKOY, Bent, and FLEMMING, Petersen. "A New Dynamometer for Measuring the Isometric Strength in Finger Flexors." Acta Orthopaedica Scandinavica 33: 172-76; Fascm. 2 1963.

172. EDITORIAL on "The Value of Oxygen Inhalation, Exercise and Trained Breathing in the Treatment of Pulmonary Emphysema." Journal of the American Medical Association 185: 30-31; July 1963.

173. EDWARDS, Donald K. "Effects of Stride and Position on the Pitching Rubber on Control in Baseball Pitching." Research Quarterly 34: 9-14; March 1963.

174. EDWARDS, William E. "The Study of Monkey, Ape, and Human Morphology and Physiology Relating to Strength and Endurance. Phase I: The Relationships of Human Size to Strength." Technical Documentary Report No. ARL-TDR-63-19. Holliman Air Force Base, New Mexico 23; July 1963.

175. EDWARDS, William E. "The Study of Monkey, Ape, and Human Morphology and Physiology Relating to Strength and Endurance. Phase II. Factors in the Posture and Grasping Strength of Monkeys, Apes, and Man." Technical Documentary Report No. ARL-TDR-63-21, Holliman Air Force Base, New Mexico, July 1963.

176. EGEBERG, O. "The Effect of Exercise on the Blood Clotting System." Scandinavian Journal of Clinical and Laboratory Investigation 15: 8-13; No. 1, 1963.

177. EICHELBERGER, Lillian; ROMA, Michael; and MOULDER, Peter V. "Tissue Studies During Recovery from Immobilization Atrophy." Journal of Applied Physiology 18: 623-28; May 1963.

178. ELSNER, R. W.; GAREY, W. F.; and SCHOLANDER, P. F. "Selective Ischemia in Diving Man." American Heart Journal 65: 571-72; April 1963.

179. ENGEL, M., and RAINE, W. J. "A Method for the Measurement of the Self-Concept of Children in the Third Grade." Journal of Genetic Psychology 102: 125-38; March 1963.

180. ENGLANDER, Harold R.; KESEL, Robert G.; and GUPTA, Om P. "The Aurora-Rockford, Ill., Study. Effect of Natural Flouride on the Periodontal Health of Adults." American Journal of Public Health and the Nation's Health 53; No. 8: 1233-42; Aug. 1963.

181. EPSTEIN, W. "The Influence of Assumed Size on Apparent Distance." American Journal of Psychology 76: 257-65; June 1963.
182. ESPENSCHADE, Anna S. "Restudy of Relationships Between Physical Performances of School Children and Age, Height, and Weight." Research Quarterly 34: 144-53; May 1963.
183. ESSELSTYN, Caldwell B. "Role of Government in Health and Medical Care." New York State Journal of Medicine 63: 2855-59; Oct. 1963.
184. EVANS, Ray B., and others. "Improved Mental Functioning with Premarin Therapy in Atherosclerosis." Proceedings of the Society for Experimental Biology and Medicine 113: 698-703; July 1963.
185. FALLIS, Norma; WILSON, W. R.; TETREAULT, Leon L.; and LASAGNA, Louis. "Effect of Potassium and Magnesium Aspartates on Athletic Performance." Journal of the American Medical Association 185: 129; July 1963.
186. FARQUHAR, John W., and others. "Effects of Dietary Facts on Human Erythrocyte Fatty Acid Patterns." Journal of Clinical Investigation 42: 675-85; June 1963.
187. FAULKNER, John; GREEY, George; and HUNSICKER, Paul. "Heart Rate During Physical Education Periods." Research Quarterly 34: 95-98; March 1963.
188. FEATNER, N. T. "The Effect of Differential Failure on Expectation of Success, Reported Anxiety, and Response Uncertainty." Journal of Personality 31: 289-12; Sept. 1963.
189. FELMAN, A. L. "Immediate Effects of Exercise on Apparent Limb Mass and Circumference." Internationale Zeitschrift für Angewandte Physiology 20: 38-44; May 1963.
190. FINE, Bernard J. "Introversion-Extraversion and Motor Vehicle Driver Behavior." Perceptual and Motor Skills 16: 95-100; Feb. 1963.
191. FISCHER, Robert M. C. "Serum Cholesterol in a Military Population." Journal of American Dietetic Association 42: 511-20; June 1963.
192. FISHEL, C. V. "A Study of Lifeguard Training and Behavior." Swimming Pool Age 37: 42-44; May 1963.
193. FITZGERALD, G. P. "Field Tests on the Duration of Algicides in Swimming Pools." Journal of Environmental Health 25: 319-25; March-April 1963.
194. FITZPATRICK, W. H. "Nutritional Aspects of Amino Acids and Proteins." Soviet Research in Nutrition No. 4: 3-23; 1963.
195. FLECK, Henry. "High-Frequency Discharges in Human Muscle." Annals of Physical Medicine 7: 144-50; Nov. 1963.
196. FLEISHMAN, Edwin A. "Factor Analyses of Physical Fitness Tests." Educational and Psychological Measurement 23: 647-62; Winter 1963.
197. FLEISHMAN, Edwin A., and RICH, Simon. "Role of Kinesthetic and Spatial-Visual Abilities in Perceptual-Motor Learning." Journal of Experimental Psychology 66: 6-11; July 1963.
198. FLINT, M. Marilyn. "Lumbar Posture: A Study of Roentgenographic Measurement and the Influence of Flexibility and Strength." Research Quarterly 34: 15-20; March 1963.
199. FOWLER, W. M., and GARDNER, G. W. "The Relation of Cardiovascular Tests to Measurements of Motor Performance and Skills." Pediatrics (Suppl.) 32: 778-89; Oct. 1963.
200. FOX, Edward L.; BARTELS, Robert L.; and BOWERS, Richard W. "Comparison of Speed and Energy Expenditure for Two Swimming Turns." Research Quarterly 34: 322-26; Oct. 1963.
201. FROL'KIS, V. V., and others. "Functional Changes of Circulation and Respiration with Age." Federation Proceedings 22: 1169-72;

Nov.-Dec. 1963.

202. FRY, P. C., and others. "Nutrient Intakes of Healthy Older Women." Journal of American Dietetic Association 42: 218-22; March 1963.

203. FUCHS, Franklin, and BRIGGS, Norman. "The Nature of the Muscle-Relaxing Factor. II. Some Physicochemical Properties." Journal of General Physiology 46: 893-904; May 1963.

204. GABLE, Walter, and others. "An Analysis of Cardiovascular Injuries Resulting from Accelerative Force." Aerospace Medicine 34: 929-34; Oct. 1963.

205. GARDNER, Gerald W. "Specificity of Strength Changes of the Exercised and Nonexercised Limb Following Isometric Training." Research Quarterly 34: 98-101; March 1963.

206. GAVREESKY, W. St. "Assessing the State of Preparedness for Swimmers." Journal of Sports Medicine and Physical Fitness 3: 6-10; March 1963.

207. GIOVANNONI, J. M., and ULLMANN, L. P. "Conceptions of Mental Health Held by Psychiatric Patients." Journal of Clinical Psychology 19: 398-99; Oct. 1963.

208. GOLBERG, Melvin J., and others. "Comparison of Oscillometric Index and Blood Flow of the Foot as Measured by Plethysmography." Archives of Physical Medicine and Rehabilitation 44: 308-12; June 1963.

209. GOLDFARB, Joyce Levis, and GOLDSTONE, Sanford. "Proprioceptive Involvement, Psychophysical Method, and Temporal Judgment." Perceptual and Motor Skills 17: 286; Aug. 1963.

210. GOLDNER, Fred, and BURR, Robert E. "Work and the Heart: Anticipation and Ergonometry." American Journal of the Medical Sciences 246: 192-99; Aug. 1963.

211. GOLDSEN, Rose K. "Patient Delay in Seeking Cancer Diagnosis: Behavioral Aspects." Journal of Chronic Diseases 16: 427-35; May 1963.

212. GOODMAN, Leo A. "Some Possible Effects of Birth Control on the Incidence of Disorders and on the Influence of Birth Order." Annals of Human Genetics 27: 41-52; Aug. 1963.

213. GOTTSDANKER, Robert; BROADBENT, Lee; and VAN SANT, Clarke. "Reaction Time to Single and to First Signals." Journal of Experimental Psychology 66: 163-67; Aug. 1963.

214. GRAHAM, Francis Walter. "The Role of the Psychiatrist in the Rehabilitation of the Physically Disabled." Medical Journal of Australia 2: 866-68; Nov. 1963.

215. GRANT, Alan P. "Alcoholism as a Public Health Problem in Northern Ireland." Ulster Medical Journal 21-25; June 1963.

216. GRESHAM, Samuel C.; WEBB, Wilse B.; and WILLIAMS, Robert L. "Alcohol and Caffeine: Effect on Inferred Visual Dreaming." Science 140: 1226-27; June 1963.

217. GUINTINI, C., and others. "A Study of Pulmonary Blood Volume in Man By Quantitative Radiocardiography." Journal of Clinical Investigation 42: 1589-1605; Oct. 1963.

218. GUTMANN, E. "Special Report. International Symposium on the Effect of Use and Disuse on Neuromuscular Functions." American Journal of Physical Medicine 42: 187-91; Oct. 1963.

219. HALL, Victor E. "The Relation of Heart Rate to Exercise Fitness: An Attempt at Physiological Interpretation of the Bradycardia of Training." Pediatrics 32 (Suppl.): 732-29; Oct. 1963.

220. HAMER, N. A. J. "Changes in the Absorption of Carbon Monoxide in the Lungs After Breathing Oxygen." Clinical Science 25: 385-98; Dec. 1963.

221. HAMMAR, S. L., and others. "A Study of Adolescent Obesity." GP 28: 78-85; Oct. 1963.

222. HARRIS, Charles S. "Adaptation to Displaced Vision: Visual, Motor, or Proprioceptive Change?" Science 140: 812-13; May 1963.
223. HARRIS, Dorothy V. "Comparison of Physical Performance and Psychological Traits of College Women with High and Low Fitness Indices." Perceptual and Motor Skills 17: 293-94; Aug. 1963.
224. HATTNER, R., and FROST, H. M. "Mean Skeletal Age: Its Calculation, and Theoretical Effects on Skeletal Tracer Physiology and on the Physical Characteristics of Bone." Henry Ford Hospital Medical Bulletin 11: 201-16; June 1963.
225. HAVEL, Richard J., and others. "Turnover Rate and Oxidation of Free Fatty Acids of Blood Plasma in Man During Exercise: Studies During Continuous Infusion of Palmitate $1\text{-}C^{14}$." Journal of Clinical Investigation 42: 1054-63; July 1963.
226. HAWKINS, W. H. "Some Medical and Biological Aspects of Obesity." Canadian Journal of Public Health 54: 477-81; Oct. 1963.
227. HAYBITTLE, J. L. "Mortality Rates from Cancer and Tuberculosis." British Journal of Preventive and Social Medicine 17: 23-28; Jan. 1963.
228. HEBBELINCK, Marcel, and POSTMA, Johan W. "Anthropometric Measurements, Somatotype Ratings, and Certain Motor Fitness Tests of Physical Education Majors in South Africa." Research Quarterly 34: 327-34; Oct. 1963.
229. HEBERMAN, Paul W. "Differences Between Families Admitting and Denying an Existing Drinking Problem." Journal of Health and Human Behavior 4: 141-45; Summer 1963.
230. HELLMAN, Leon, and others. "Reduction of Cholesterol and Lipids in Man by Ethyl p-Chlorophenoxyisobutyrate." Annals of Internal Medicine 59: 477-94; Oct. 1963.
231. HENSLER, N. M., and GIRON, D. G. "Pulmonary Physiological Measurements in Smokers and Non-Smokers." Journal of the American Medical Association 186: 885-89; Dec. 1963.
232. HERRING, John M. "Correction of Deformity with Orthetic Devices." Archives of Physical Medicine and Rehabilitation 44: 537-40; Oct. 1963.
233. HIGGINS, I. T. T., and others. "Tobacco Smoking and Blood Group." British Medical Journal 1167-69; Nov. 1963.
234. HILLMAN, Robert W. "Infant Feeding Patterns and Oral Habits of Overweight and Underweight Children." American Journal of Clinical Nutrition 13: 326-30; Nov. 1963.
235. HINTON, M. A., and others. "Eating Behavior and Dietary Intake of Girls 12-14 Years." Journal of American Dietetic Association 43: 223; Sept. 1963.
236. HISLOP, Helen J. "Quantitative Changes in Human Muscular Strength During Isometric Exercise." Journal of the American Physical Therapy Association 43: 21-38; Jan. 1963.
237. HODGES, Emory F., and others. "A Follow-Up Study of Potential Delinquents." American Journal of Psychiatry 120: 449-53; Nov. 1963.
238. HODGKINS, Jean. "Reaction Time and Speed of Movement in Males and Females at Various Ages." Research Quarterly 34: 335-43; Oct. 1963.
239. HODGKINS, Jean, and SKUBIC, Vera. "Cardiovascular Efficiency Test Scores for College Women in the United States." Research Quarterly 34: 454-61; Dec. 1963.
240. HOEVNER, Earl F., and others. "The Effect of a Skeletal Muscle Relaxant on Muscle Extensibility." Industrial Medicine and Surgery 32: 516-20; Dec. 1963.
241. HONG, S. K., and others. "Diving Pattern, Lung Volumes, and Alveolar Gas of the Korean Diving Woman (Ama)." Journal of

Applied Physiology 18: 457-65; May 1963.

242. HOOD, Albert B. "A Study of the Relationship Between Physique and Personality Variables Measured by the MMPI." Journal of Personality 31: 97-107; March 1963.

243. HORN, Daniel. "Behavioral Aspects of Cigarette Smoking." Journal of Chronic Diseases 16: 383-95; May 1963.

244. HOWELL, Maxwell L.; HODGSON, James L.; and SORENSON, J. Thomas. "Effects of Circuit Training on the Modified Harvard Step Test." Research Quarterly 34: 154-57; May 1963.

245. HUMPHRIES, M., and McINTYRE, J. "An Attempt to Find a Locus of Temporary Work Decrement in Pursuit Rotor Performance." Perceptual and Motor Skills 17: 397-98; Oct. 1963.

246. HUMPHRIES,. M., and McINTYRE, J. "Effect of Interpolated Monocular and Binocular Visual Pursuit Reaction Time Activity on Reminiscence in Pursuit Rotor Performance." Perceptual and Motor Skills 17: 333-34; Oct. 1963.

247. HUNDLEY, James M. "Public Health Service Program." New York State Journal of Medicine 63: 2708-12; Sept. 1963.

248. HYDE, LeRoy. "Cigarette Smoking and Cancer of the Lung." California Medicine 98: 313-17; June 1963.

249. IATRIDIS, Sotirios G., and FERGUSON, John H. "Effect of Physical Exercise on Blood Clotting and Fibrinolysis." Journal of Applied Physiology 18: 337-44; March 1963.

250. IRVING, David W., and YAMAMOTO, T. "Cigarette Smoking and Cardiac Output." British Heart Journal 25: 126-32; Jan. 1963.

251. IRVING, Laurence. "Bradycardia in Human Divers." Journal of Applied Physiology 18: 489-91; May 1963.

252. IRWIN, Richard L., and HEIN, Manfred M. "Contracture of Slow Striated Muscle during Calcium Deprivation." Journal of General Physiology 47: 133-49; Sept. 1963.

253. ISAACSON, Allen, and SANDOW, Alexander. "Effects of Zinc on Responses of Skeletal Muscle." Journal of General Physiology 46: 655-77; March 1963.

254. ISERI, Lloyd T., and others. "Pathogenesis of Congestive Heart Failure Correlation Between Anaerobic Metabolism and Blood Plasma Volume Changes Following Exercise." Annals of Internal Medicine 59: 788-97; Dec. 1963.

255. ISMAIL, A. H.; CHRISTIAN, J. E.; and KESSLER, W. V. "Body Composition Relative to Motor Aptitude for Preadolescent Boys." Research Quarterly 34: 462-70; Dec. 1963.

256. IUNG, Omero S., and WADE, Franklin V. "The Treatment of Burns With Ice Water, Phisohex, and Partial Hypothermia." Industrial Medicine and Surgery 32: 365-70; Sept. 1963.

257. JACKMAN, Norman, and others. "Interaction, Emotion, and Physiologic Change." Journal of Health and Human Behavior 4: 83-87; Summer 1963.

258. JAMES, George. "Heart Disease." Archives of Internal Medicine 112: 262-69; Aug. 1963.

259. JEGIER, W. "The Relation Between Cardiac Output and Body Size." British Heart Journal 25: 425-30; July 1963.

260. JENSEN, Clayne R. "Effects of Five Training Combinations of Swimming and Weight Training on Swimming the Front Crawl." Research Quarterly 34: 471-77; Dec. 1963.

261. JOBSIS, Frans F. "Spectrophotometric Studies on Intact Muscle. I. Components of Respiratory Chain." Journal of General Physiology 46: 905-28; May 1963.

262. JOBSIS, Frans F. "Spectrophotometric Studies on Intact Muscle. II. Recovery from Contractile Activity." Journal of General Physiology 46: 929-69; May 1963.

263. JOHANSSON, Gunnar, and others. "Visible Distances in Simulated Night Driving Conditions with Full and Dipped Headlights." Ergonomics 6: 171-79; April 1963.

264. JOHNSON, Louis F.; NEVILLE, J. Ryan; and BANCROFT, Richard W. "The Effect of Decreased Barometric Pressure on Oxygen Consumption." Aerospace Medicine 34: 97-100; Feb. 1963.

265. JOHNSTON, Francis E. "Skeletal Age and Its Prediction in Philadelphia Children." Human Biology 35: 192-202; May 1963.

266. JOKL, Ernst. "Youth and Swimming Records." Amateur Athlete 34: 24-25; Oct. 1963.

267. JOSENHANS, W. K. T. "An Evaluation of Some Methods of Improving Muscle Strength." Revue Canadienne de Biologie 21: 315-23; Sept.-Dec. 1962.

268. KAHN, Harold A. "The Relationship of Reported Coronary Heart Disease Mortality to Physical Activity of Work." American Journal of Public Health and the Nation's Health 53; No. 7: 1058-67; July 1963.

269. KANG, B. S., and others. "Changes in Body Temperature and Basal Metabolic Rate of the Ama." Journal of Applied Physiology 18: 483-88; May 1963.

270. KAO, Frederick F., and SUCKLING, Eustace E. "A Method for Producing Muscular Exercise in Anesthetized Dogs and Its Validity." Journal of Applied Physiology 18: 194-96; Jan. 1963.

271. KARVONEN, Martti J. "Effects of Exposures to Extremely Hot Environments on Temperatures of the Tympanic Membrane, the Oesophagus, and the Rectum of Men." Biomedical Laboratory 6570th Aerospace Medical Research Laboratories Report No. AMRL-TDR-63-85 47; Oct. 1963.

272. KAUFMAN, Freda. "Myopia Seen Psychoanalytically." Psychoanalysis and Psychoanalytic Review 50: 24-39; Spring 1963.

273. KAUFMAN, Harry. "Task Performance and Responses to Failure as Functions of Imbalance in the Self-Concept." Psychological Monographs General and Applied 77: 1-15; 1963.

274. KAUFMAN, W. C. "Human Tolerance for Some Thermal Environments of Aerospace." Aerospace Medicine 34: 889-96; Oct. 1963.

275. KEGELES, S. Stephen. "Why People Seek Dental Care - A Test of a Conceptual Formulation." Journal of Health and Human Behavior 4: 166-73; Fall 1963.

276. KELLIHER, M. S. "Analysis of Two Styles of Putting." Research Quarterly 34: 344-49; Oct. 1963.

277. KELLY, Joseph. "A Study of Leadership in Two Contrasting Groups." Sociological Review 11: 322-35; Nov. 1963.

278. KENNEDY, J. E., and LANDESMAN, J. "Series Effects in Motor Performance Studies." Journal of Applied Psychology 47: 202-205; June 1963.

279. KENYON, Gerald S., and TORRESANI, Robert. "Effects of Short Periods of Physical Training Upon Body Weight of White Mice." Research Quarterly 34: 21-26; March 1963.

280. KEOGH, Jack. "Extreme Attitudes Toward Physical Education." Research Quarterly 34: 27-33; March 1963.

281. KEYS, Ancel, and others. "Coronary Heart Disease among Minnesota Business and Professional Men Followed Fifteen Years." Circulation 28: 381-95; Sept. 1963.

282. KIESSLING, K. H. "The Metabolism of Growing Muscle." Experimental Cell Research 31: 8-12; June 1963.

283. KIMIZUKA, H., and KOKETSU, K. "Changes in the Membrane Permeability of Frog's Sartorius Muscle Fibers in Ca-Free EDTA Solution." Journal of General Physiology 47: 379-92; Nov. 1963.

284. KING, K. W., and others. "Height and Weight of Haitian Children." American Journal of Clinical Nutrition 13: 106-109; Sept. 1963.

285. KINNEY, Jo Ann S. "Night Vision Sensitivity During Prolonged Restriction from Sunlight." Journal of Applied Psychology 47: 65-67; Feb. 1963.
286. KINTSCH, Walter. "All-or-None Learning and the Role of Repetition in Paired-Associate Learning." Science 140: 310-12; April 1963.
287. KNAPP, Peter, and others. "Addictive Aspects in Heavy Cigarette Smoking." American Journal of Psychiatry 119: 966-72; April 1963.
288. KNOTT, Virginia B. "Stature, Leg Girth, and Body Weight of Puerto Rican Private School Children Measured in 1962." Growth 27: 157-74; Sept. 1963.
289. KNUTTGEN, Howard G., and STEENDAHL, Kai. "Fitness of Danish School Children During the Course of One Academic Year." Research Quarterly 34: 34-40; March 1963.
290. KOFF, Arnold, and others. "Cardiorespiratory Responses to Strenuous Exercise in Physically Trained and Untrained Normal Men." Research Quarterly 34: 41-49; March 1963.
291. KONTTINEN, Aarne, and RAJASALMI, Matti. "Effect of Heavy Cigarette Smoking on Postprandial Triglycerides, Free Fatty Acids, and Cholesterol." British Medical Journal 850-52; March 1963.
292. KONTTINEN, Aarne, and SOMER, Timo. "Effect of Muscular Exercise on Plasma Viscosity in Correlation with Postprandial Triglyceridemia." Journal of Applied Physiology 18: 991-93; Sept. 1963.
293. KOTILAINEN, Martti. "Group Therapy for Obesity." Annales Medicinae Internae Fennize 52: 155-61; 1963.
294. KOZAR, Andrew J. "Telemetered Heart Rates Recorded During Gymnastic Routines." Research Quarterly 34: 102-106; March 1963.
295. KOZAR, Andrew J., and HUNSICKER, Paul. "A Study of Telemetered Heart Rate During Sports Participation of Young Adult Men." Journal of Sports Medicine and Physical Fitness 3: 1-5; March 1963.
296. KRAL, Jiri; ZENISEK, A.; and HAIS, I. M. "Sweat and Exercise." Journal of Sports Medicine and Physical Fitness 3: 105-13; June-Sept. 1963.
297. KRAMPEN, Martin. "Handedness as a Variable of Importance in Determining Apparent Movement Direction." Journal of Psychology 56: 61-67; July 1963.
298. KROLL, Walter. "A Reliable Method of Assessing Isometric Strength." Research Quarterly 34: 350-55; Oct. 1963.
299. KROLL, Walter. "Reliability Variations of Strength Test-Retest Situations." Research Quarterly 34: 50-55; March 1963.
300. KRUMHOLZ, Richard A.; KING, Leroy H., Jr.; and ROSS, Joseph C. "Effect of Pulmonary Vascular Engorgement on Dl During and Immediately After Exercise." Journal of Applied Physiology 18: 1180-82; Nov. 1963.
301. KUNKEL, Herry G.; MANNIK, Mart; and WILLIAMS, Ralph C. "Individual Antigenic Specificity of Isolated Antibodies." Science 140: 1218-19; June 1963.
302. KUSHNER, Estelle N. "Effect of Motivating Instructions on Simple Reaction Time." Perceptual and Motor Skills 17: 321-22; Aug. 1963.
303. La CAVA, GIUSEPPE. "Boxer's Encephalopathy." Journal of Sports Medicine and Physical Fitness 3: 87-92; June-Sept. 1963.
304. LANPHIER, E. H., and RAHN, H. "Alveolar Gas Exchange During Breath-Hold Diving." Journal of Applied Physiology 18: 471-77; May 1963.

305. LANPHIER, E. H., and RAHN, H. "Alveolar Gas Exchange During Breath Holding with Air." Journal of Applied Physiology 18: 478-82; May 1963.

306. LARSON, Roger K. "The Chronic Effect of Cigarette Smoking on Pulmonary Ventilation." American Review of Respiratory Diseases 88: 630-35; Nov. 1963.

307. LATANE, Bibb, and ARROWOOD, John A. "Emotional Arousal and Task Performance." Journal of Applied Psychology 47: 324-27; Oct. 1963.

308. LEAVITT, Lewis A., and others. "Conservative Management of Trophic Skin Changes in Lower Extremity Amputees." Archives of Physical Medicine and Rehabilitation 44: 262-66; May 1963.

309. LEE, Marjorie M.C.; CHANG, K. S. F.; and CHAN, Mary M.C. "Sexual Maturation of Chinese Girls in Hong Kong." Pediatrics 32: 389-98; Sept. 1963.

310. LEEVY, C. M., and BAKER, H. "Metabolic and Nutritional Effects of Alcoholism." Journal of Environmental Health 7: 453-59; Oct. 1963.

311. LEIDHOLT, John D. "Biomechanics of Ankle Injuries in Skiing as Related to Release Bindings." Surgical Clinics of North America 43: 363-65; April 1963.

312. LETTIN, Alan W. F. "Diagnosis and Treatment of Sprained Ankle." British Medical Journal 1056-60; April 1963.

313. LEUCHTENBERGER, Cecile, and others. "Cytological and Cytochemical Alterations in the Respiratory Tract of Mice after Exposure to Cigarette Smoke, Influenza Virus, and Both." Cancer Research 23: 555-65; May 1963.

314. LEVIN, Morton L. "Smoking and Cancer: Retrospective Studies and Epidemiological Evaluation." Journal of Chronic Diseases 16: 375-81; May 1963.

315. LEWIS, Augustus. "Attitudes of Geriatric Patients Toward Planned Activity." Geriatrics 18: 725-28; Sept. 1963.

316. LIBA, Marie R., and STAUFF, Marilyn R. "A Test for the Volleyball Pass." Research Quarterly 34: 56-63; March 1963.

317. LINDEBURG, Franklin A.; EDWARDS, Donald K.; and HEATH, William D. "Effect of Isometric Exercise on Standing Broad Jump." Research Quarterly 34: 478-83; Dec. 1963.

318. LIPPMANN, Heinz I., and others. "The Measurement of Blood Flow in the Dependent Limb." Archives of Physical Medicine and Rehabilitation 44: 360-67; July 1963.

319. LOCKERT, Edna W., and BRYAN, James H. "Motor Activity and Verbal Behavior." Perceptual and Motor Skills 16: 585-87; April 1963.

320. LORDAHL, Daniel S. "Effect of the Weight-Contrast Illusion on Rotary Pursuit Performance." Perceptual and Motor Skills 17: 87-90; Aug. 1963.

321. LURIA, S. M. "The Effect of Body Position on Meridional Variation in Scotopic Acuity." American Journal of Psychology 76: 598-606; Dec. 1963.

322. LUSHBOUGH, C. H., and URBIN, M. C. "Effect of Diet on Serum and Muscle Chloride and Muscle Moisture." Journal of Nutrition 81: 99-102; Oct. 1963.

323. MAKOVER, Henry B. "Patient and Physician Delay in Cancer Diagnosis: Medical Aspects." Journal of Chronic Diseases 16: 419-26; May 1963.

324. MALAN, R. M. "Occupational Health in Eastern Europe." British Journal of Industrial Medicine 20: 154-64; April 1963.

325. MALHOTRA, M. S.; SEN GUPTA, J.; and RAI, R. M. "Pulse Count as a Measure of Energy Expenditure." Journal of Applied Physiology 18: 994-96; Sept. 1963.

326. MALINA, Robert M.; PLAGENZ, Lyle B.; and RARICK, G. Lawrence. "Effect of Exercise Upon the Measurable Supporting Strength of Cloth and Tape Ankle Wraps." Research Quarterly 34: 158-65; May 1963.
327. MALMO, Robert B. "On Central and Autonomic Nervous System Mechanisms in Conditioning, Learning, and Performance." Canadian Journal of Psychology 17: 1-36; March 1963.
328. MARGARIA, R., and others. "Energy Cost of Running." Journal of Applied Physiology 18: 367-70; March 1963.
329. MARGARIA, R., and others. "Kinetics and Mechanism of Oxygen Debt Contraction in Man." Journal of Applied Physiology 18: 371-77; March 1963.
330. MARGARIA, R. "Biochemistry of Muscular Contraction and Recovery." Journal of Sports Medicine and Physical Fitness 3: 145-56; June-Sept. 1963.
331. MARSHALL, Robert J., and SHEPHERD, John T. "Effects of Epinephrine on Cardiovascular and Metabolic Responses to Leg Exercise in Man." Journal of Applied Physiology 18: 1118-22; Nov. 1963.
332. MARSTON, Albert R., and LEVINE, Edward M. "Variables Affecting Mental Health Attitudes in a College Sample." Mental Hygiene 47: 216-22; April 1963.
333. MASSE, Genevieve, and HUNT, Edward E., Jr. "Skeletal Maturation of the Hand and Wrist in Most African Children." Human Biology 35: 3-25; Feb. 1963.
334. MATELL, Georg. "Time-Courses of Changes in Ventilation and Arterialgas Tensions in Man Induced by Moderate Exercise." Acta Physiologica Scandinavica 58: 5-47; (Suppl. 206) 1963.
335. MATHEWS, Donald K., and others. "Aerobic and Anaerobic Efficiency." Research Quarterly 34: 356-60; Oct. 1963.
336. MATHEWS, Donald K., and others. "Analysis of Oxygen Consumption of Women While Walking in Different Styles of Shoes." Archives of Physical Medicine and Rehabilitation 44: 569-71; Oct. 1963.
337. McCORMACK, P. D.; BINDING, F.R.S.; and McELHERAN, W. G. "Effects on Reaction Time of Partial Knowledge of Results of Performance." Perceptual and Motor Skills 17: 279-81; Aug. 1963.
338. McCORMACK, P. D., and McELHERAN, W. G. "Follow-Up of Effects on Reaction Time With Partial Knowledge of Results." Perceptual and Motor Skills 17: 565-66; Oct. 1963.
339. McCUTCHEN, J. H. "Investigation of Foodborne Diseases." Journal of Environmental Health 25: 339-46; March-April 1963.
340. McELHENNEY, Thomas R., and PETERSEN, Kay H. "Physical Fitness for Asthmatic Boys." Journal of the American Medical Association 185: 142-43; July 1963.
341. McFARLAND, R. A. "Experimental Evidence of the Relationship Between Ageing and Oxygen Want: In Search of a Theory of Ageing." Ergonomics 6: 339-66; Oct. 1963.
342. McILROY, Malcom B. "The Respiratory Response to Exercise." Pediatrics 32 (Suppl.): 680-82; Oct. 1963.
343. McKOWN, Charles H.; VERHULST, Henry L.; and CROTTY, John J. "Overdosage Effects and Danger from Tranquilizing Drugs." Journal of the American Medical Association 185: 425-30; Aug. 1963.
344. McLANE, Robert. "Cigarette Smoking and Pulmonary Ventilation." Journal of Occupational Medicine 5: 353-55; July 1963.
345. McLEAN, Donald M. "Infection Hazards in Swimming Pools." Pediatrics 31: 811-18; May 1963.
346. McNEILL, David, and LIVSON, Norman. "Maturation Rate and Body Build in Women." Child Development 34: 25-32; March 1963.

347. MEANS, Richard K. "The Oral Method of Historical Research in Health Education." Research Quarterly 34: 518-21; Dec. 1963.

348. MEIER, G. W., and FOSHEE, D. P. "Genetics, Age, and the Variability of Learning Performances." Journal of Genetic Psychology 102: 267-76; June 1963.

349. MEREDITH, H. V., and KNOTT, V. B. "Descriptive and Comparative Study of Body Size on United States Schoolgirls." Growth 26: 283-95; Dec. 1962.

350. MEYER, R. M., and others. "Epidemiology of Summer Camp Accidents." Archives of Environmental Health 7: 335; Sept. 1963.

351. MEYERS, Carlton R., and OHNMACHT, Fred W. "Needs of Pupils in Relation to Athletic Competition of the Junior High School Level." Research Quarterly 34: 521-24; Dec. 1963.

352. MEYERS, William J.; VALENSTEIN, Elliot S.; and LACEY, John I. "Heart Rate Changes after Reinforcing Brain Stimulation in Rats." Science 140: 1233-35; June 1963.

353. MICHAEL, Ernest D.; HORVATH, Steven M.; and JOHNSON, Melvin A. "Local Metabolites and the Circulatory Adjustments to Exercise." Research Quarterly 34: 64-69; March 1963.

354. MICHAEL, Ernest D., and others. "Comparison of Step Test and Hand Cranking Test to Indicate Exercise Tolerance of Cardiovascular Patients." Archives of Physical Medicine and Rehabilitation 44: 327-31; June 1963.

355. MILLARD, D. Ralph, Jr. "Closure of Boxing Lacerations Between Rounds." Archives of Surgery 86: 295-98; Feb. 1963.

356. MILLER, William F.; TAYLOR, Harold F.; and PIERCE, Alan K. "Rehabilitation of the Disabled Patient with Chronic Bronchitis and Pulmonary Emphysema." American Journal of Public Health and the Nation's Health 53; No. 3: 18-24; March (Suppl.) 1963.

357. MILNER, G. "Ascorbic Acid in Chronic Psychiatric Patients - A Controlled Trial." British Journal of Psychiatry (Journal of Mental Science) 109: 294-99; March 1963.

358. MILTHERS, Ebbe. "Poisoning in Childhood." Danish Medical Bulletin 10: 132-35; June 1963.

359. MITCHELL, J. H. "Mechanisms of Adaptation of the Left Ventricle to Muscular Exercise." Pediatrics (Suppl.) 32: 660-69; Oct. 1963.

360. MOLBECH, Svend. "Average Percentage Force at Repeated Maximal Isometric Muscle Contractions at Different Frequencies." Acta Physiologica Scandinavica 59: 103-104; (Suppl. 213) 1963.

361. MONELLO, L. F., and MAYER, J. "Obese Adolescent Girls: An Unrecognized Minority Group?" American Journal of Clinical Nutrition 13: 35-39; July 1963.

362. MOREY, Lloyd, and others. "Metaxalone, a New Skeletal Muscle Relaxant." Journal of the American Osteopathic Association 62: 517-21; Feb. 1963.

363. MORTIMER, Rudolf G. "Effect of Low Blood-Alcohol Concentrations in Simulated Day and Night Driving." Perceptual and Motor Skills 17: 399-408; Oct. 1963.

364. MOSLEY, W. H.; SPEERS, J. F.; and CHIN, T. D. Y. "Epidemiologic Studies of a Large Urban Outbreak of Infectious Hepatitis." American Journal of Public Health and the Nation's Health 53: 1603-17; Oct. 1963.

365. MOSS, A. J., and ADAMS, Forrest H. "Index of Indirect Estimation of Diastolic Blood Pressure." American Journal of Diseases of Children 106: 364-67; Oct. 1963.

366. MOSTYN, E. M., and others. "Pulmonary Diffusing Capacity of Athletes." Journal of Applied Physiology 18: 687-95; July 1963.

367. MOTTRAM, R. F., and others. "Influence of Local Cooling on the Glucose and $O_2$ Uptake of Human Forearm Muscle." Clinical

Science 25: 249-61; Oct. 1963.

368. MULLINS, L. J., and FRUMENTO, A. S. "The Concentration Dependence of Sodium Efflux from Muscle." Journal of General Physiology 46: 629-54; March 1963.

369. MULLINS, L. J., and NODA, K. "The Influence of Sodium-Free Solutions on the Membrane Potential of Frog Muscle Fibers." Journal of General Physiology 47: 117-32; Sept. 1963.

370. MUSTARD, J. F., and MURPHY, Edmond A. "Effect of Smoking on Blood Coagulation and Platelet Survival in Man." British Medical Journal 846-49; March 1963.

371. NAGLE, Francis J., and BEDECKI, Thomas G. "Use of the 180 Heart Rate Response as a Measure of Circulorespiratory Capacity." Research Quarterly 34: 361-69; Oct. 1963.

372. NAGLER, F. P. "Recent Experience with Oral Poliovirus Vaccine in Canada." Canadian Journal of Public Health 54: 509-14; Nov. 1963.

373. NATIONAL RECREATION ASSOCIATION. "Municipal Sports Programs and Policies." Recreation 56: 214-18; May 1963.

374. NELSON, Dale O. "Effect of Selected Rhythms and Sound Intensity of Human Performance as Measured by the Bicycle Ergometer." Research Quarterly 34: 484-88; Dec. 1963.

375. NEWTON, Jerry L. "The Assessment of Maximal Oxygen Intake." Journal of Sports Medicine and Physical Fitness 3: 164-69; June-Sept. 1963.

376. NORMAN, L. G. "Advancing Frontiers in Industrial Health." British Journal of Industrial Medicine 20: 73-81; April 1963.

377. NUNNEY, Derek N. "Fatigue, Impairement, and Psycho-Motor Learning." Perceptual and Motor Skills 16: 369-75; April 1963.

378. OBRIST, Paul A. "Skin Resistance Levels and Galvanic Skin Response: Unilateral Differences." Science 139: 227-28; Jan. 1963.

379. O'CONNELL, A. L., and GARDNER, E. B. "The Use of Electromygraphy in Kinesiological Research." Research Quarterly 34: 166-84; May 1963.

380. OLIVER, Samuel. "Relationship of Fatigue to Gastrointestinal Inadequacy." Current Therapeutic Research 5: 620-25; Dec. 1963.

381. PARIZKOVA, J., and POVPA, O. "Some Metabolic Consequences of Adaptation to Muscular Work." British Journal of Nutrition 17: 341-45; 1963.

382. PASSMORE, R., and SWINDELLS, Y. E. "Observations on the Respiratory Quotients and Weight Gain of Man After Eating Large Quantities of Carbohydrates." British Journal of Nutrition 17: 331-39; 1963.

383. PENTECOST, B. L., and others. "The Effects of Posture on the Blood Flow in the Inferior Vena Cava." Clinical Science 24: 149-58; Feb. 1963.

384. PEREZ-CRUET, Jorge; BLACK, William C.; and BRADY, Joseph V. "Heart Rate: Differential Effects of Hypothalamic and Septal Self-Stimulation." Science 140: 1235-36; June 1963.

385. PHELAN, P. D. "Accidental Poisoning in Childhood." Medical Journal of Australia 2: 656-58; Oct. 1963.

386. PHILLIPS, William H. "Influence of Fatiguing Warm-Up Exercises on Speed of Movement and Reaction Latency." Research Quarterly 34: 370-78; Oct. 1963.

387. PHOEBUS, Clifford P. "A Longitudinal Study of Healthy Young Men: Correlation Coefficients." Bureau of Medicine and Surgery Project MR005.13-3001, Subtask 2, Report No. 7:10; July 1963.

388. PIERREL, R., and MURRAY, C. S. "Some Relationships Between Comparative Judgement, Confidence, and Decision-Time in Weight Lifting." American Journal of Psychology 76: 28-38; March 1963.

389. PIERSON, William R. "Isometric Strength and Occurrence of Fatigue and Work Decrement." *Perceptual and Motor Skills* 17: 470; Oct. 1963.

390. PIERSON, William R., and LOCKHART, Aileene. "Effect of Menstruation on Simple Reaction and Movement Time." *British Medical Journal* 796-99; March 1963.

391. PIERSON, William R., and RASCH, Philip J. "Isometric Strength as a Factor in Functional Muscle Testing." *American Journal of Physical Medicine* 42: 205-207; Oct. 1963.

392. PIERSON, William R., and RASCH, Philip J. "The Injurious Consequences of Maximal Isometric Arm Exercises." *Journal of the American Physical Therapy Association* 43: 582-83; Aug. 1963.

393. PILGRIM, Francis J., and KAMEN, Joseph M. "Predictors of Human Food Consumption." *Science* 139: 501-502; Feb. 1963.

394. PILISUK, Marc. "Anxiety, Self-Acceptance, and Open-Mindedness." *Journal of Clinical Psychology* 19: 387-90; Oct. 1963.

395. PLAS, Fernand R. "Electrocardiographic Changes During Work and Prolonged Effort." *Journal of Sports Medicine and Physical Fitness* 3: 131-36; June-Sept. 1963.

396. POCOCK, Gordon S. "Electromyographic Study of the Quadriceps During Resistive Exercise." *Journal of the American Physical Therapy Association* 43: 427-34; June 1963.

397. POND, D. A.; RYLE, A.; and HAMILTON, Madge. "Marriage and Neurosis in a Working-Class Population." *British Journal of Psychiatry* (Journal of Mental Science) 109: 592-98; Sept. 1963.

398. PONTHIEUX, N. A., and BARKER, D. G. "An Analysis of the AAHPER Youth Fitness Test." *Research Quarterly* 34: 525-26; Dec. 1963.

399. POWELL, T. J., and others. "Obesity in Aircrew." *Aerospace Medicine* 34: 21-25; Jan. 1963.

400. PRESTON, Noel W. "Type-Specific Immunity Against Whooping-cough." *British Medical Journal* 724-26; Sept. 1963.

401. PRICE, W. E., and others. "A Preliminary Report on Effects of Routine Military Innoculation on Respiratory Illness." *Proceedings of Society for Experimental Biology and Medicine* 114: 369-72; Nov. 1963.

402. PROKOP, Ludwig. "Adrenals and Sport." *Journal of Sports Medicine and Physical Fitness* 3: 115-21; June-Sept. 1963.

403. PUYET, J. H.; DOWNS, E. F.; and BUDIER, R. "Nutritional and Growth Characteristics of Arab Refugee Children from Lebanon." *American Journal of Clinical Nutrition* 13: 147-57; Sept. 1963.

404. RAINE, June, and others. "The Distribution of Alveolar Ventilation In Mitral Stenosis at Rest and After Exercise." *Clinical Science* 24: 63-68; Feb. 1963.

405. RASCH, Philip J. "Hand Grip Exercise Effect on Strength and Forearm Hypertrophy." *Archives of Physical Medicine and Rehabilitation* 44: 507-10; Sept. 1963.

406. RASCH, Phillip J., and O'CONNELL, Eugene R. "TPS Scores of Experienced Karate Students." *Research Quarterly* 34: 108-10; March 1963.

407. RASCH, P. J., and PIERSON, W. R. "Isometric Exercise, Isometric Strength, and Anthropometric Measurements." *Internationale Zeitschrift Für Angewandte Physiologie* 20: 1-4; May 1963.

408. RASCH, Philip J., and PIERSON, W. R. "Isotonic Training and Isometric Strength." *Perceptual and Motor Skills* 16: 229-30; Feb. 1963.

409. RASCH, Philip J., and PIERSON, W. R. "Reaction and Movement Time of Experienced Karateka." *Research Quarterly* 34: 242-43; May 1963.

410. RASCH, Philip J., and PIERSON, W. R. "Some Relationships of

Isometric Strength, Isotonic Strength, and Anthropometric Measures." Ergonomics 6: 211-15; April 1963.

411. RATH, R., and others. "Change of Attitudes as a Function of Some Personality Factors." Journal of Social Psychology 60: 311-17; Aug. 1963.

412. REEDER, Thelma. "Electromyographic Study of the Latissimus Dorsi Muscle." Journal of the American Physical Therapy Association 43: 165-72; March 1963.

413. REUBEN, J. P., and others. "Muscle: Volume Changes in Isolated Single Fibers." Science 142: 246-48; Oct. 1963.

414. RICCI, Benjamin. "Oxygen Uptake and Blood Lactate Relationship in Subjects of Vastly Different Somatotype." International Zeitschrift Für Angewandte Physiologie 20: 173-77; Oct. 1963.

415. ROARK, Kent T.; WEISS, Robert L.; and YOUNG, Paul O. "The Tennessee Study of Bacteriological Tests for Caries Activity." American Journal of Public Health and the Nation's Health 53; No. 4: 564-71; April 1963.

416. ROBINSON, Sid. "Temperature Regulation in Exercise." Pediatrics 32 (Suppl.): 691-702; Oct. 1963.

417. RODERRUCK, C. E. "Nutrition and Growth of Iowa School Girls." American Journal of Clinical Nutrition 13: 173-85; Sept. 1963.

418. ROEMER, Milton I., and ELLING, Ray H. "Sociological Research on Medical Care." Journal of Health and Human Behavior 4: 49-68; Spring 1963.

419. ROHTER, Frank D.; ROCHELLE, Rene H.; and HYMAN, Chester. "Exercise Blood Flow Changes in the Human Forearm During Physical Training." Journal of Applied Physiology 18: 789-93; July 1963.

420. RONCO, Paul G. "An Experimental Quantification of Kinesthetic Sensation: Extent of Arm Movement." Journal of Psychology 55: 227-38; Jan. 1963.

421. ROSENBERG, Nathan. "Acceptability of Mouth Protectors by High School Football Players." Public Health Reports 78: 941-46; Nov. 1963.

422. ROSENBLUM, M. P., and BACHRACH, D. L. "Study of Behavioral Aspects of the Aging Psychiatric Patient." Geriatrics 18: 247-50; March 1963.

423. ROSENSTOCK, I. M. "Public Response to Cancer Screening and Detection Programs: Determinants of Health Behavior." Journal of Chronic Diseases 16: 407-18; May 1963.

424. ROSS, Joseph C., and others. "Relationship of Increased Breath-Holding Diffusing Capacity to Ventilation in Exercise." Journal of Applied Physiology 18: 794-97; July 1963.

425. ROTH, Jesse, and others. "Hypoglycemia: A Potent Stimulus to Secretion of Growth Hormone." Science 140: 987-88; May 1963.

426. ROVELLI, E., and AGNEMO, P. "Physiological Characteristics of the 'Step' Exercise." Internationale Zeitschrift Für Angewandte Physiologie 20: 190-94; Oct. 1963.

427. ROWE, L. M. "Preliminary Statistical Study of Low Back Pain." Journal of Occupational Medicine 5: 336-41; July 1963.

428. RUMBALL, Aubrey. "Latent Coronary Heart Disease Detected by Electrocardiogram Before and After Exercise." British Medical Journal 423-28; Feb. 1963.

429. RUSALEM, Herbert. "Client Characteristics and Counselor Perceptions Suggesting the Need for a Work Evaluation Program for Older Disabled Workers." Archives of Physical Medicine and Rehabilitation 44: 98-104; Feb. 1963.

430. RYAN, E. Dean. "Relative Academic Achievement and Stabilometer Performance." Research Quarterly 34: 185-90; May 1963.

431. RYAN, E. Dean. "The Relationship of Galvanic Skin Conductance

to Ring-Peg Performance." *Research Quarterly* 34: 526-28; Dec. 1963.

432. SAHA, P. N.; DEVI, A. S.; and RAO, M. N. "Seasonal Variation of Basal Metabolic Rate in Indians." *Indian Journal of Medical Research* 51: 153-63; March 1963.

433. SALAND, Gamliel. "Rescue Breathing and Cardiac Massage." *New York State Journal of Medicine* 63: 3521-23; Dec. 1963.

434. SALBER, Eva; MacMAHON, Brian; and HARRISON, Sarah V. "Influence of Siblings on Student Smoking Patterns." *Pediatrics* 31: 569-72; April 1963.

435. SALBER, Eva J.; WELSH, B., and TAYLOR, S. V. "Reasons for Smoking Given by Secondary School Children." *Journal of Health and Human Behavior* 4: 118-29; Summer 1963.

436. SALBER, Eva J., and others. "Smoking Behavior, Recreational Activities, and Attitudes Toward Smoking Among Newton Secondary School Children." *Pediatrics* 32: 911-18; Nov. 1963.

437. SALMINEN, Simo, and KONTTINEN, Aarne. "Effect of Exercise on Na and K Concentrations in Human Saliva and Serum." *Journal of Applied Physiology* 18: 812-14; July 1963.

438. SALTIN, B. "Circulatory Response to Standard Exercise Before and After Exposure to Heavy Exercise or Heat." *Acta Physiologica Scandinavica* 59: 138; (Suppl. 213) 1963.

439. SALTIN, B., and KOZLOWSKI, S. "Effect of Dehydration on the Body Fluids." *Acta Physiologica Scandinavica* 59: 139 (Suppl. 213) 1963.

440. SAMPSON, E. E. "Achievement in Conflict." *Journal of Personality* 31: 510-16; Dec. 1963.

441. SANTSCHI, W. R., and others. "Moments of Inertia and Centers of Gravity of the Living Human Body." *Technical Documentary Report* No. AMRL-TDR-63-36 Wright Patterson Air Force Base, Ohio; May 1963.

442. SARGENT, Dorothy W. "Weight-Height Relationship of Young Men and Women." *American Journal of Clinical Nutrition* 13: 318-25; Nov. 1963.

443. SCHANE, H. Philip, and LEONARD, S. L. "Phosphorylase *a* Activity in Uterine Muscle: Stimulation by Ethylenediaminetetraacetic Acid." *Science* 140: 811-12; May 1963.

444. SCHLUNDT, Christena L. "The 1928-29 Dance Season in New York." *Research Quarterly* 34: 70-83; March 1963.

445. SCHULL, W. J., and NEEL, J. V. "Sex Lineage, Inbreeding, and Growth in Childhood." *American Journal of Human Genetics* 15: 106-14; March 1963.

446. SCHWEITZER, P., and others. "Oxygen Consumption and Blood Flow in the Muscle of the Forearm in Patients with Cardiac Failure." *Clinical Science* 25: 493-97; Dec. 1963.

447. SCOTT, Frances G. "A Study of Exclusions in a Mental Rehabilitation Program." *Journal of Health and Human Behavior* 4: 183-94; Fall 1963.

448. SCRIMOHAW, Nevin S. "Malnutrition and the Health of Children." *Journal of American Dietetic Association* 42: 203-209; March 1963.

449. SEATON, D. A., and DUNCAN, L. J. P. "Treatment of 'Refractory Obesity' with 'Formula Diet'." *British Medical Journal* 219-21; July 1963.

450. SEGAL, Bernard L., and McGARRY, Thomas F. "The Venous and Arterial Pulse." *Journal of the American Medical Association* 185: 323-26; July 27, 1963.

451. SELLERS, A. H. "The Problem of Lung Cancer in Ontario." *Canadian Journal of Public Health* 54: 249-58; June 1963.

452. SELTZER, Carl C. "Morphologic Constitution and Smoking." *Journal of the American Medical Association* 183: 639-45; Feb. 1963.

453. SELZER, Melvin L., and others. "Alcoholism, Mental Illness, and the 'Drunk Driver'." *American Journal of Psychiatry* 120: 326-31; Oct. 1963.

454. SEXTON, Alan W. "Value of Longitudinal Studies of Exercise Fitness Tests." *Pediatrics* 32 (Suppl.): 730-36; Oct. 1963.

455. SHAFFER, John W. "A New Acquiescence Scale for MMPI." *Journal of Clinical Psychology* 19: 412-15; Oct. 1963.

456. SHANKER, Rao. "Cardiovascular Responses to Head-Stand Posture." *Journal of Applied Physiology* 18: 987-90; Sept. 1963.

457. SHAW, David B.; KNAPP, Martin S.; and DAVIES, D. H. "Variations of Blood-Pressure in Hypertensives during Sleep." *Lancet* 1: 797-98; April 1963.

458. SHEPHERD, John T. "Circulatory Changes in the Lungs During Exercise." *Pediatrics* 32 (Suppl.): 683-90; Oct. 1963.

459. SHIPMAN, W. G., and MARQUETTE, C. H. "The Manifest Hostility Scale: A Validation Study." *Journal of Clinical Psychology* 19: 104-106; Jan. 1963.

460. SHONTZ, Franklin C. "Some Characteristics of Body Size Estimation." *Perceptual and Motor Skills* 16: 665-71; June 1963.

461. SHOWMAN, Jan, and WEDLICK, L. T. "The Use of Cold Instead of Heat for the Relief of Muscle Spasm." *Medical Journal of Australia* 2: 612-15; Oct. 1963.

462. SIMKIN, Benjamin, and others. "Prolactin Activity in Blood During the Normal Human Menstrual Cycle." *Proceedings of the Society for Experimental Biology and Medicine* 113: 485-88; June 1963.

463. SIMONSON, Ernst. "Use of the Electocardiogram in Exercise Tests." *American Heart Journal* 66: 552-65; Oct. 1963.

464. SKUBIC, Vera, and HODGKINS, Jean. "Cardiovascular Efficiency Test for Girls and Women." *Research Quarterly* 34: 191-98; May 1963.

465. SLOAN, A. W. "Physical Fitness of College Students in South Africa, United States of America, and England." *Research Quarterly* 34: 244-48; May 1963.

466. SMART, Russel, and SMART, Mollie. "Kraus-Weber Scores and Personality Adjustment of Nursery School Children." *Research Quarterly* 34: 199-205; May 1963.

467. SMEDAL, Harald A.; HOLDEN, George R.; and SMITH, Joseph R., Jr. "Cardiovascular Responses to Transversally Applied Accelerations." *Aerospace Medicine* 34: 749-52; Aug. 1963.

468. SMEDAL, H. A., and others. "The Physiological Limitations of Performance During Acceleration." *Aerospace Medicine* 34: 48-55; Jan. 1963.

469. SMITH, C. P. "Achievement-Related Motives and Goal Setting Under Different Conditions." *Journal of Personality* 31: 124-40; March 1963.

470. SMITH, J. P., and FINK, S. L. "The Relationship Between Physical Improvement and Psychological Factors in Chronically Ill Patients." *Journal of Clinical Psychology* 19: 289-91; July 1963.

471. SMITH, Leon E., and LEWIS, Floyd D. "Handedness and Its Influence Upon Static Neuromuscular Control." *Research Quarterly* 34: 206-12; May 1963.

472. SMITH, Leon E., and WHITLEY, Jim D. "Relation Between Muscular Force of a Limb, under Different Starting Conditions and Speed of Movement." *Research Quarterly* 34: 489-96; Dec. 1963.

473. SMODLAKA, Vosin. "Interval Training in Heart Disease." *Journal of Sports Medicine and Physical Fitness* 3: 93-100; June-Sept. 1963.

474. SNYDER, Frederick; HOBSON, J. Allan; and GOLDFRANK, Frederick. "Blood Pressure Changes during Human Sleep."

Science 142: 1313-14; Dec. 1963.

475. SNYDER, Richard G. "Human Survivability of Extreme Impacts in Free-Fall." Federal Aviation Agency Report 63-15; 29; Aug. 1963.

476. SNYDER, Richard G. "Human Tolerances to Extreme Impacts in Free-Fall." Aerospace Medicine 34: 695-709; Aug. 1963.

477. SOLKOFF, Norman, and CHRISIEN, Gil. "Frustration and Perceptual-Motor Performance." Perceptual and Motor Skills 17: 282; Aug. 1963.

478. SONG, S. H., and others. "Lung Volumes and Ventilatory Responses to High $CO_2$ and Low $O_2$ in the Ama." Journal of Applied Physiology 18: 466-70; May 1963.

479. SOUTH-EAST SCOTLAND. Faculty of the College of General Practitioners. "Vitamin A in Acne Vulgaris." British Medical Journal 294-96; Aug. 1963.

480. SPENCE, Kenneth W. "Cognitive Factors in the Extinction of the Conditioned Eyelid Response in Humans." Science 140: 1224-25; June 1963.

481. SPENCER, Herta, and SAMACHSON, Joseph. "Effect of Calcium Metabolism in Man." Journal of Nutrition 81: 301-306; Dec. 1963.

482. SPENCER, Richard R. "Ballistics in the Mat Kip." Research Quarterly 34: 213-18; May 1963.

483. SPRINGER, W. E., and others. "The Metabolic Cost of Performing a Specific Exercise in a Low Friction Environment." Aerospace Medicine 34: 486-88; June 1963.

484. STANDAL, B. R. "Nutritional Value of Proteins of Oriental Soybean Foods." Journal of Nutrition 81: 279-85; Nov. 1963.

485. STADT, Zachary M., and others. "Direct Mail Dental Motivation of Parents of Three-Year-Old Children." American Journal of Public Health and the Nation's Health 53; No. 4: 572-81; April 1963.

486. START, K. B. "Relation of Warm-Up to Spontaneous Muscle Injury." New York State Journal of Medicine 63: 3530-32; Dec. 1963.

487. START, K. B., and HOLMES, Rosemary. "Local Muscle Endurance with Open and Occluded Intramuscular Circulation." Journal of Applied Physiology 18: 804-807; July 1963.

488. STENER, Bertil. "Hyperextension Injuries to the Metacarpophalangeal Joint of the Thumb--Rupture of Ligaments, Fracture of Sesamoid Bones, Rupture of Flexor Pollicis Brevis." Acta Chirurgica Scandinavica 125: 275-93; April 1963.

489. STERKY, Göran. "Physical Work Capacity in Diabetic Schoolchildren." Acta Paediatrica 52: 1-10; Jan. 1963.

490. STOREY, Winnifred F., and BUTLER, John. "Evidence that the $PCO_2$ of Mixed Venous Blood is not a Regulator of Ventilation During Exercise." Journal of Applied Physiology 18: 345-48; March 1963.

491. STOWERS, J. M. "Nutrition in Diabetes." Nutrition Abstracts and Reviews 33: 1-15; Jan. 1963.

492. STRAKER, M. "Prognosis for Psychiatric Illness in the Aged." American Journal of Psychiatry 119: 1069-75; May 1963.

493. STROMME, S.; ANDERSEN, K. Lange; and ELSNER, R. W. "Metabolic and Thermal Responses to Muscular Exertion in the Cold." Journal of Applied Physiology 18: 756-63; July 1963.

494. STRONG, Clinton H. "Motivation Related to Performance of Physical Fitness Tests." Research Quarterly 34: 497-507; Dec. 1963.

495. SUDDON, Florence H. "Paced and Self-Pacing Performance on a Simple Motor Task." Perceptual and Motor Skills 16: 247-54; Feb. 1963.

496. SUTTON, Layton R., and others. "Further Studies of Increment Variation in Muscles: Isotonic - Isometric Brief Maximum Strengthening Technic." Archives of Physical Medicine and Rehabilitation 44: 167-71; March 1963.

497. SWEENEY, M. J., and others. "Diet and Fatty Acid Distribution in Subcutaneous Fat in the Cholesterol in Young Infants." Journal of Clinical Investigation 42: 1-10; Jan. 1963.

498. SWEENEY, Ralph E. "Oral Treatment of Skeletal Muscle Spasm." Current Therapeutic Research 5: 305; June 1963.

499. TAYLOR, Henry L., and others. "The Standardization and Interpretation of Submaximal and Maximal Tests of Working Capacity." Pediatrics 32 (Suppl.): 703-22; Oct. 1963.

500. THOMAS, Caroline B., and ROSS, Donald Clare. "Observations on Some Possible Precursors of Essential Hypertension and Coronary Artery Disease. VIII. Relationship of Cholesterol Level to Certain Habit Patterns under Stress." Bulletin of the Johns Hopkins Hospital 113: 225-38; Oct. 1963.

501. TORNVALL, Gunnar. "Assessment of Physical Capabilities." Acta Physiologica Scandinavica 58: 5-93; (Suppl. 201) 1963.

502. TRENHOLME, M., and MILNE, H. "Studies of Teenage Eating in Ontario." Canadian Journal of Public Health 54: 455-62; Oct. 1963.

503. TRETHEWIE, E. R. "On Smoking." Medical Journal of Australia 1: 145-49; Feb. 1963.

504. TURINO, G. M., and others. "Effect of Exercise on Pulmonary Diffusing Capacity." Journal of Applied Physiology 18: 447-56; May 1963.

505. TURNER, Margery J. "A Study of Modern Dance in Relation to Communication, Choreographic Structure, and Elements of Composition." Research Quarterly 34: 219-27; May 1963.

506. TWEIT, A. H.; GOLLNICK, P. D.; and HEARN, G. R. "Effect of Training Program on Total Body Reaction Time of Individuals of Low Fitness." Research Quarterly 34: 508-13; Dec. 1963.

507. UHR, Leonard; PLATZ, Arthur; and MILLER, James G. "Time and Dosage Effects of Meprobamate on Simple Behavioral Tasks." Journal of General Psychology 68: 317-23; April 1963.

508. ULICH, Eberhard. "Transfer of Training Related to Finger-Dexterity." Perceptual and Motor Skills 17: 274; Aug. 1963.

509. UNGER, Roger H., and others. "The Effects of Total Starvation Upon the Levels of Circulating Glucagon and Insulin in Man." Journal of Clinical Investigation 42: 1031-39; July 1963.

510. VALENTI, Dino. "Auxometric Study of a Group of Adolescents of the C.O.N.I. Centres." Journal of Sports Medicine and Physical Fitness 3: 11-13; March 1963.

511. van BEAUMONT, W., and BULLARD, Robert W. "Sweating: Its Rapid Response to Muscular Work." Science 141: 643-46; Aug. 1963.

512. VAUGHAN, R. P. "The Effect of Stress on the MMPI Scales K and D." Journal of Clinical Psychology 19: 432-33; Oct. 1963.

513. VENABLES, P. H. "Amplitude of the Electrocardiogram and Level of Skin Potential." Perceptual and Motor Skills 17: 54; Aug. 1963.

514. VENABLES, P. H., and others. "On the Measurement of the Level of Skin Potential." British Journal of Psychology 54: 251-60; Aug. 1963.

515. VINCENT, R. G., and MARCHETTA, E. "The Relationship of the Use of Tobacco and Alcohol to Cancer of the Oral Cavity, Pharynx or Larynx." American Journal of Surgery 106: 501-505; Sept. 1963.

516. VISHER, Paul S. "National Shelter Program and Its Medical

Aspects." New York State Journal of Medicine 63: 3294-97; Nov. 1963.

517. VOGEL-SPROTT, M. "Influence of Peripheral Visual Distraction on Perceptual Motor Performance." Perceptual and Motor Skills 16: 765-72; June 1963.

518. VONACHEN, H. A., and ROCHE, Wm. J. "Comparative Study of Executive Health Examination." Journal of Occupational Medicine 5: 389-95; Aug. 1963.

519. VUORI, Pauli, and PANGLE, Roy. "Motor Ability of Finnish Male College Students." Research Quarterly 34: 398-99; Oct. 1963.

520. WAGMAN, William. "Sodium Chloride Deprivation: Development of Sodium Chloride as a Reinforcement." Science 140: 1403-1404; June 1963.

521. WALKER, Richard N. "Body Build and Behavior in Young Children: II. Body Build and Parents' Ratings." Child Development 34: 1-24; March 1963.

522. WALLACH, H., and KARSH, E. B. "The Modification of Stereoscopic Depth-Perception and the Kinetic Depth-Effect." American Journal of Psychology 76: 429-35; Sept. 1963.

523. WALLACH, H.; MOORE, M. E.; and DAVIDSON, L. "Modification of Stereoscopic Depth-Perception." American Journal of Psychology 76: 191-204; June 1963.

524. WAMSLEY, J. R., and ROBERTS, J. E. "Body Composition of USAF Flying Personnel." Aerospace Medicine 34: 403-405; May 1963.

525. WARDWELL, Walter I.; BABUSON, Claus B.; and CARON, Herbert S. "Social and Psychological Factors in Coronary Heart Disease." Journal of Health and Human Behavior 4: 154-65; Fall 1963.

526. WARNICK, Kathleen P., and ZAEHRINGER, Mary V. "Food Patterns of Deficient Diets." Journal of Home Economics 55: 169-72; March 1963.

527. WATKINS, David L. "Motion Pictures as an Aid in Correcting Baseball Batting Faults." Research Quarterly 34: 228-33; May 1963.

528. WEAR, C. L. "Relationship of Flexibility Measurements to Length of Body Segments." Research Quarterly 34: 234-38; May 1963.

529. WEATHERSBY, Hal T., and others. "The Kinesiology of Muscles of the Thumb: An Electromyographic Study." Archives of Physical Medicine and Rehabilitation 44: 321-26; June 1963.

530. WEBSTER, James R. "The Effect of Tobacco Smoking on Pulmonary Function in Asymptomatic Women." American Review of Respiratory Diseases 88: 393-94; Sept. 1963.

531. WEISS, W., and others. "Smoking and the Health of Older Men." Archives of Environmental Health 7: 44-53; Nov. 1963.

532. WELCH, Marya. "Prediction of Motor Skill Attainment from Early Learning." Perceptual and Motor Skills 17: 263-66; Aug. 1963.

533. WEYBREW, Benjamin B. "Accuracy of Time Estimation and Muscular Tension." Perceptual and Motor Skills 17: 118; Aug. 1963.

534. WHALEN, William J., and FANGMAN, John. "Respiration of Heart Muscle as Affected by Oxygen Tension." Science 141: 274-75; July 1963.

535. WHITING, H. T. A. "Variations in Floating Ability With Age in the Male." Research Quarterly 34: 84-90; March 1963.

536. WHITLEY, J. D., and SMITH, L. E. "Velocity Curves and Static Strength-Action Strength Correlations in Relation to the Mass Moved by the Arm." Research Quarterly 34: 379-95; Oct. 1963.

537. WIDDICOMBE, J. G., and NADEL, Jay A. "Airway Volume, Airway Resistance, and Work and Force of Breathing: Theory." Journal of Applied Physiology 18: 863-68; Sept. 1963.
538. WIDIMSKY, Jiri; BERGLUND, Erik; and MALMBERG, Rolf. "Effect of Repeated Exercise on the Lesser Circulation." Journal of Applied Physiology 18: 983-86; Sept. 1963.
539. WILCOTT, R. C. "Effects of High Environmental Temperature on Sweating and Skin Resistance." Journal of Comparative and Physiological Psychology 56: 778-82; Aug. 1963.
540. WILDER, Charles S. "Persons Injured While at Work." Industrial Medicine and Surgery 32: 191-96; May 1963.
541. WING, J., and TOUCHSTONE, R. M. "A Bibliography of the Effects of Temperature on Human Performance." Technical Documentary Report No. AMR4-TDR-63-103. Wright-Patterson Air Force Base, Ohio, Feb. 1963.
542. WOLF, Stewart. "Psychosomatic Aspects of Competitive Sports." Journal of Sports Medicine and Physical Fitness 3: 157-63; June-Sept. 1963.
543. WONG, Francisco M., and GRACE, William J. "Sudden Death After Near-Drowning." Journal of the American Medical Association 186: 724-26; Nov. 1963.
544. WOOD, W. B., and LEVE, L. H. "Ventilatory Dynamics Under Hyperbaric States." Journal of Environmental Health 7: 47-59; July 1963.
545. WORCHEL, P., and McCORMICK, B. L. "Self-Concept and Dissonance Reduction." Journal of Personality 31: 588-99; Dec. 1963.
546. WORKMAN, J. M., and ARMSTRONG, B. W. "Oxygen Cost of Treadmill Walking." Journal of Applied Physiology 18: 798-803; July 1963.
547. WRIGHT, John H.; GESCHEIDER, George A.; and BATTIG, William F. "Performance on a Motor Learning Task as Related to MAS Scores." Perceptual and Motor Skills 16: 368; April 1963.
548. WYNDHAM, C. H., and others. "Differences Between Ethnic Groups in Physical Working Capacity." Journal of Applied Psychology 18: 361-66; March 1963.
549. WYNDHAM, C. H., and others. "The Influence of Gross Body Weight on Oxygen Consumption and Physical Working Capacity of Manual Laborers." Ergonomics 6: 275-86; July 1963.
550. YOUNG, C. M., and others. "Estimating Body Fat of Normal Young Women." Journal of American Dietetic Association 42: 409-13; May 1963.
551. ZACKS, James L., and FREEDMAN, Sanford J. "Active and Passive Movement in the Production of Kinesthetic Tilt After-Effects." Perceptual and Motor Skills 16: 702; June 1963.
552. ZAMEL, N.; YOUSSEF, Hassan Hosny; and PRIME, F. J. "Airway Resistance and Peak Expiratory Flow-Rate in Smokers and Non-Smokers." Lancet 1: 1237-38; June 1963.
553. ZIMBARDO, P., and FORMICA, R. "Emotional Comparison and Self Esteem as Determinants of Affiliation." Journal of Personality 31: 141-62; June 1963.
554. ZIMMER, James G., and DEMIS, D. Joseph. "Burns and Other Skin Lesions: Microcirculatory Responses in Man during Healing." Science 140: 994-96; May 1963.
555. ZIMNEY, G. H., and WEIDENFELLER, E. W. "Effects of Music Upon GSR and Heart Rate." American Journal of Psychology 76: 311-14; June 1963.
556. ZORAB, P. A.; PRIME, F. J.; and HARRISON, Ailie. "Estimation of Height from Tibial Length." Lancet 1:195-96; Jan. 1963.
557. ZUBEK, John P., and others. "Effect of Severe Immobilization of the Body on Intellectual and Perceptual Processes." Canadian

Journal of Psychology 17: 118-33; March 1963.

558. ZWI, S., and GOLDMAN, H. I. "Pulmonary Function in Healthy Young Adult Male Smokers." South African Journal of Medical Sciences 27: 102; Dec. 1962.

# Part III - THESES ABSTRACTS

**University of Alberta, Edmonton, Alberta, Canada** (M. L. Howell)

1. ARMSTRONG, Janet Jackson. "The Effects of Isometric Exercise on Certain Anthropometric Measurements, Muscular Endurance, and Muscular Strength of College Women. M. A. 1963. 89 p. (M. L. Howell)

Thirty-three freshman college women students acted as their own control. For the control period of 6 weeks, no physical education classes were taken. For the 6 weeks of the experimental period, the subjects performed two different isometric exercises daily—six 6-sec. maximal contractions of the muscles of the abdominal, gluteal, and thigh regions and one 6-sec. contraction of the muscles of the right hand and forearm. No statistically significant mean changes occurred in the measurements of weight; of waist, hip, and right forearm girth; of rear thigh and forearm skinfolds; or of right quadriceps strength. There was a significant increase in right grip strength during the experimental period and also in number of sit-ups, a measurement of muscular endurance.

2. COOPER, Leonard A. A Comparison of the Effects of Short Intensive and Prolonged Intensive Exercise Programs on Treadmill Performance and Certain Cardiorespiratory Functions. M. Sc. 1963. 175 p. (J. F. Alexander)

Two exercise programs of different intensities and duration (5BX and circuit training) were compared on the basis of their contribution to cardiorespiratory fitness as measured by performance on two treadmill tests, maximal breathing capacity, heart rate, oxygen consumption and ventilatory R. Q. during rest, exercise, and recovery. Both circuit training and 5BX contributed to gains in cardiorespiratory fitness following five weeks of training. It was concluded that in order to derive maximum benefit from the 5BX programs additional distance running should be included and that the quality and intensity of the exercises was more important than the quantity and duration.

3. COYNE, L. Lee. The Relationship of Maximal Oxygen Intake To Body Composition and Total Body Weight in Active Males. M. A. 1963. 81 p. (M. L. Howell, J. Sproule)

Maximal oxygen intake was determined by treadmill running, body composition by water immersion densitometry, and percent body fat estimated by the formula of Keys and Brozek. Fat-free body weight, which correlated .39 with maximal oxygen intake (significant at .05 level), was the best maximal metabolic reference standard of these measured. A more satisfactory estimate of the maximal oxygen intake resulted from the inclusion of the fat-free body weight, total body fat, and total body weight instead of the fat-free body weight alone. Rigid interpretation of results using the formula of Keys and Brozek for percent body fat was apparently limited in a study involving only trained subjects.

4. CUNNINGHAM, David A. The Effect of Breathing High Concentrations of Oxygen on Treadmill Performance and Selected Physiological Variables. M. Sc. 1963. 64 p. (M. L. Howell, B. J. Sproule)

When breathing oxygen as compared to air, a statistically significant improvement in treadmill performance time was demonstrated. The oxygen debt was significantly reduced for the first minute of recovery with oxygen despite the significantly longer performance time. There was no difference in the oxygen debt after the first minute of recovery. Little difference was observed between the recovery levels of pyruvic acid. The lactic acid levels were lower after the trials with oxygen. The mean peak values of excess lactic acid found during the third minute of recovery were significantly lowered by breathing high concentrations of oxygen during a run to exhaustion. A relationship was observed after the third minute of recovery between excess lactic acid and oxygen debt but not between the lactic acid and oxygen debt when breathing air. Breathing high concentrations of oxygen during the maximal performance did not alter the apparent relationship.

5. DEMPSEY, Jerry A. Anthropometrical and Physiological Observations on Obese and Non-Obese Young Men Undergoing a Program of Vigorous Exercise. M.Sc. 1963. 127 p. (J. F. Alexander)
Seven young men, differing markedly in body fat content, were tested at the beginning and end of consecutive periods of: daily training (8 weeks), voluntary training (5 weeks), and daily training (5 weeks). Body composition was assessed by water immersion densitometry, skin-fold fat measures and gross, and fat-corrected body dimension. Basal oxygen consumption, muscular strength, and the Balke treadmill test were also measured. The weight losses in initially overweight subjects undergoing daily training were associated with increases in fat-free body weight and muscular mass and with decreases in skin-fold and total body fat. Total proportional strength increased and decreased with training and detraining respectively and was not directly dependent upon body mass or body weight. Basal oxygen intake increased per unit of weight and decreased per unit of fat-free body weight. In 36 sedentary young men, five measures of body mass and body compotion were found by multiple regression to account for 52121 percent of the interpersonal variance in treadmill performance time. Relative obesity or percent body fat accounted for 23.87 percent of the variance and was significantly related to performance time with the effect of gross body weight partially out (r = .603).

6. HODGSON, James Lea. The Effect of Circuit Training and Isometric Exercises on Treadmill Performance. M.Sc. 1963. 78 p. (J. F. Alexander)
Three groups of college students were equated on the basis of the Balke treadmill test. All three groups attended required physical education classes in which badminton was the activity twice a week for five weeks. In addition, Group I did circuit training, Group II did isometric exercises three times a week, and Group III acted as a control. Ten minutes of circuit training or of isometric exercise in addition to badminton was no more effective in improving treadmill performance time than badminton alone. Circuit training caused a greater improvement in treadmill performance than isometric exercises.

7. RICHARDSON, John R. The Effect of Brief Isometric and Isotonic Exercise Programmes on the Development of Strength and Muscular Endurance. M.Sc. 1963. 66 p. (W. D. Smith)
Three randomly assigned groups of tenth-grade boys were measured initially for girth and fat, strength at 115° extension, and muscular endurance (holding time). The isometric exercise group performed 6-sec. contractions daily for 5 weeks at 90°, 135°, and 165° extension. The isotonic exercise group did three daily lifts in 6 sec. of a maximal weight from the 90° to the 165° extended position. The third group was the control group. The isotonic exercise group increased in strength significantly over the isometric group at 135°. Strength of both exercise groups increased significantly over the control group at 115° and 135°. Muscular endurance, using the same load for initial and final

tests, increased significantly for both exercise groups when compared to the control group. Cross-transfer of strength was statistically significant for both exercise groups at 115° and 135°. There was no evidence of cross-transfer of muscular endurance, hypertrophy, or specificity of training.

**Arkansas State College, State College, Arkansas** (L. J. Dowling)

8. BARNES, Richard. The Effect of Weight Training on Speed in the 100-Yard Dash. M. S. E. 1961. 71 p. (L. J. Dowling)
Two groups, each of 15 grade 9 boys, were equated initially on 100-yd. dash time. One group had 14 weeks of physical education with basketball, tumbling, volleyball, and dodge ball and the other group spent an equal time in progressive weight training with 3 sets of 8 repetitions in half-squats, curls, and full knee bends. Both groups ran two 100-yd. dashes for time per week with 15 min. rest between. In the group having physical education classes, one boy ran slower and six showed no improvement; all boys in the weight training program improved. The mean gain of the physical education group was from 13.3 to 13.1 sec. and the mean gain in the weight training group was from 13.4 to 12.7 sec.

9. DAVIDSON, Billy S. The Effect of Isometric Contraction and Weight Training on High School Boys. M. S. E. 1963. 55 p. (L. J. Dowling)
Three equated groups, each of 12 senior high school boys, were formed from 62 boys in a physical education class at Jonesboro, Arkansas. The isometric exercise group did the dead lift, curl, reverse curl, press, behind-the-head press, bench press, and leg press daily at three heights for 10 sec. each. The weight training group did the two-hand press, behind-the-head press, two-hand curl, reverse curl, dead lift, bench press, knee bends, and raise on toes for 3 sets of 10 repetitions maximum on Monday, Wednesday, and Friday and ran agility drills, practiced starts, and punched a heavy bag on Tuesday and Thursday. The control group practiced track and field 2 hours a day for 12 weeks. The isometric exercise group made significant gains of 5 percent in weight and 11 percent in strength; the weight training group made significant gains of 5 percent in weight and 8 percent in strength, and the track and field group made no gain in weight and a nonsignificant 2 percent gain in strength. None of the differences in gains between groups was significant.

10. DUKE, Bernis. A Physical Activity Comparison Between Fathers and Sons of Newport, Arkansas. M. S. E. 1963. 48 p. (L. J. Dowling)
Information was obtained by questionnaire from 100 sons and fathers, most of whom participated in some type of physical recreation. The most popular activities of both were table tennis, boating, fishing, hunting, and tennis. But sons were most interested in football, basketball, soccer, badminton, and tennis. Fathers were most interested in swimming, boating, hunting, tennis, golf, and bowling. Sons learned more activities in school than their fathers.

11. HANKS, Dale E. Economic Stability for Arkansas High School Interscholastic Football. M. S. E. 1960. 48 p. (L. J. Dowling)
Administrators and coaches in 70 high schools in North Arkansas with AAA, AA, A, and B classifications were surveyed. The football program has been supported traditionally from gate receipts. These have declined because of greater interest in college football, outdoor activities, commercial recreation, television, and poor facilities for

spectators while admission charges have remained constant and expenses have increased. Arkansas school districts were also below the national norm in funds available from general revenue. The recommendations for local school districts included: an athletic budget, a reasonable award policy, advance ticket sales, higher admission prices, and fund-raising drives. Recommendations for the Arkansas Athletic Association included "open game" scheduling, resumption of spring practice and championships, less expensive insurance (if possible), and central purchasing for equipment.

12. HARRIS, John. Adult Recreational Activities. M.S.E. 1962. 51 p. (L. J. Dowling)
Questionnaires were mailed to 90 parents of students in Partridge Rural High School and 66 responded. The activities with high preference were card games, fishing, swimming, social dancing, photography, and bowling. Men participated more in card games, fishing, hunting, movies, and photography. Women participated more in card games, photography, fishing, and movies. Women participated more in crafts and hobbies than men but general interest was low. The parents showed definite interest in individual and dual sports but little interest in team sports.

13. HILBURN, Dick. The Effect of Weight Training on Gaining of Weight. M.S.E. 1960. 41 p. (L. J. Dowling)
The 60 boys in Kennett Junior High School, Missouri, were divided in two equal groups. The weight training group used standard exercises with 2 sets of 8-12 repetitions; with pull-ups, sit-ups with weight, and rope jumping daily; and with light workouts Monday and Thursday and heavy workouts Tuesday and Friday. The control group had basketball, stunts and tumbling, dodgeball, and track and field in class. From November to May the weight training group made a mean gain from 112.8 to 124.7 lb. (significant at the .01 level) and the control group gained from 113.5 to 117.8 lb.

14. HOLMES, James K. The Relationship Between Weight Training and Vertical Jumping. M.S.E. 1962. 47 p. (L. J. Dowling)
Junior high boys at Tyronza were divided into three matched groups of 11 each on the basis of the Sargent Jump. One group had weight training on Monday, Wednesday, and Friday for 10 weeks. One group spent equal time jumping at a basketball on a target. Both groups joined the regular physical education class on Tuesday and Thursday. The weight training group made an 18 percent gain from a mean of 13.4 in. (significant at the .01 level). The jumping group made an insignificant 9 percent gain from 13.1 in. The control group made an insignificant 11 percent gain from 13.4 in. The differences in mean gains between groups were not significant.

15. MAYO, William. Physical Education Needs and Interests of High School Boys. M.S.E. 1962. 64 p. (L. J. Dowling)
Need and interest questionnaires were refined in a pilot study. The interest questionnaire was administered to boys in grades 9 and 10 at Trezevant High School. Need questionnaire returns were obtained from 12 chairmen of physical education departments in 13 major southern universities. Students tended to be most interested in relays, softball, football, basketball, swimming, badminton, volleyball, rifle shooting, bowling, and checkers. The departmental chairmen favored conditioning exercises, swimming, volleyball, tumbling, badminton, soccer, tennis, preventive exercises, golf, and social dancing.

16. McCOLLUM, Garland L. A Comparison Between the Physically Fit and the Physically Unfit in Intelligence, Academic Achievement,

and Attendance in School. M.S.E. 1962. 40 p. (L. J. Dowling)
The AAHPER Youth Fitness Test was administered to 172 male students in Greene County Technical High School, Paragould, Arkansas. The 28 students with the highest scores were considered the "fit" group and the 28 with the lowest scores were considered the "unfit" students, with approximately equal numbers in the 4 grades. Comparisons of intelligence based on the California Test of Mental Maturity, grade point average, and attendance were made with t at the .05 level of confidence. The mean difference in intelligence between the fit and unfit group (96.3 and 95.4) was not significant. The mean difference in attendance (167 and 159.2) was not significant. However, the mean grade point average of the fit group (2.68) was 40 percent higher than that of the unfit group (1.91) and the difference was significant, although intelligence and attendance were essentially equal.

17. McKEEL, Ethridge. The Present Status of Required Physical Education in High Schools of Northeast Arkansas. M.S.E. 1961. 49 p. (L. J. Dowling)
Questionnaire returns were obtained from 89 of 90 high schools in 17 counties. Fifty-five of the schools required physical education for graduation but 34 did not give credit for it. The same grading system as in academic subjects was used by 38 schools; the majority based grades of sports skills and general achievement tests. More of the larger schools tended to require physical education, had better facilities, had a more varied program, and required grades. Class size ranged from 20 to 35 and students were divided according to age in 47 schools. Over half the schools taught baseball, volleyball, softball, calisthenics, badminton, touch football, basketball, table tennis, track and field, and weight lifting.

18. RIGGS, Don S. The Effect of Weight Training and Rebound Tumbling on Performance in the Vertical Jump. M.S.E. 1962. 37 p. (L. J. Dowling)
Three groups, each of 6 boys, were equated on the basis of an initial Sargent Jump test and height and weight. One group did weight training 3 days a week with 3 sets of 5-10 repetitions maximum. One group did rebound tumbling 3 days a week. Both groups joined the group with physical education classes 5 days a week on their off days. In 8 weeks, the percent gains in vertical jump were respectively 7, 21, and 7 but none of the differences between or within groups was significant.

19. SHOCK, John E. The Comparison of Three Selected Activities in Developing Physical Fitness. M.S.E. 1962. 41 p. (L. J. Dowling)
The subjects were boys in three physical education classes, 28 in each, at Gideon Junior High School (Missouri). All were given the Youth Fitness Test recommended by the President's Council on Youth Fitness before and after a 6-week program. One class spent 5 min. on each of the 10 developmental exercises recommended by the Council. The other two classes had 45 min. of track or softball practice after 5 min. of warm-up exercises. The fitness program and track classes had an average 9 percent gain and the softball class had a 6 percent gain but none of the mean gains within groups or mean differences in gains between groups was significant at the .05 level.

20. SMART, Sue. Previous Physical Education Activities of Freshman College Women at Arkansas State College. M.S.E. 1963. 70. p. (L. J. Dowling)
After a pilot study with 36 college freshman women, questionnaire returns were obtained from 320 college freshman women. The girls had,

on the average, participated in two years of physical education and the majority came from schools that required physical education for graduation but some allowed substitution of band, cheerleading, or glee club. About half had been allowed to use their physical education class period as a study period and a third had participated in intramural or interscholastic programs. The girls tended to like volleyball, basketball, and softball and to dislike tumbling and calisthenics. The policy of men teaching girls physical education classes seemed widely accepted. The girls had little instruction in rhythmical activities and a poor background in physical education relative to that recommended by authorities.

21. TEMPLETON, Bill. Relationship Between Practice Time and Winning Football. M.S.E. 1960. 28 p. (L. J. Dowling)
Data were collected by questionnaire from 55 of 60 high school coaches in northeastern Arkansas and southeastern Missouri concerning years of coaching experience, time spent in practice, and win-loss record for the past five years. No significant difference in percent of games won was found between coaches with less than and more than six years of experience and those using less than and more than 2-hr. practice sessions. Beginning coaches did not appear to use longer practice sessions than veteran coaches.

22. WEBB, Bobby. The Effectiveness of Two Methods of Warm-Up on Physical Fitness. M.S.E. 1963. 62 p. (L. J. Dowling)
Two classes of grade 7 and 8 boys at Ste. Genevieve, Missouri (N = 59), with about equal means in the AAHPER Youth Fitness Test, were used as subjects. One class, determined by tossing a coin, had 5 min. of related warm-up and 35 min. instruction and practice in softball, touch football, and basketball. The other class had 15 min. of strenuous calisthenic exercise and 25 min. in the activities. Each activity lasted four weeks and 10 class periods were followed by skill and knowledge tests. The group using 15 min. of strenuous warm-up gained significantly in fitness at the .05 level; the group using 5 min. of related warm-up did not gain significantly in fitness. The skill and knowledge test achievements were essentially equal. Students ranking high in physical fitness tended to rank high in intelligence and those ranking high in fitness and intelligence tended to do better in the skill and knowledge tests. The 15-min. strenuous calisthenic warm-up seemed preferable to the 5-min. related warm-up, since physical fitness improved significantly with no loss of skill or knowledge.

### University of British Columbia, Vancouver 8, British Columbia

(S. R. Brown)

23. BANISTER, Eric W. The Relative Effectiveness of Interval Circuit Training Compared with Three Other Methods of Fitness Training in a School Physical Education Programme. M.P.E. 1963. 49 p. (P. Mullins)
Four groups of junior high school boys were matched on initial scores of the Larson Dynamic Muscular Strength and modified Harvard Step tests plus McCloy's Classification Index. Each followed a different training regimen (Interval Circuit Running; Circuit Running; Circuit Games; Conventional Physical Education) for eight class periods spread over two months. The Interval Circuit Running group showed significant improvement in combined Harvard and Larson test scores over Circuit Training-Games and Conventional Physical Education groups; there were no other differences between groups.

24. JOHNSON, Joseph Robert. The Development of a Single-Item Test as a Measure of Soccer Skill. M.P.E. 1963. 67 p. (H.D. Whittle)

A wall volley test of soccer skill was developed by an ex-professional player. It differs from previous tests in dimensions of target area, distance of restraining line, method of scoring, and the use of a moving ball at the start. Reliability correlation coefficients were between .900 and .924 and a quintiserial validity coefficient for mean scores of five groups ranked according to skill was .856.

25. MONCRIEFF, John. Variations in the Effect of Two Training Methods Upon Work Output. M.P.E. 1963. 38 p. (H. D. Whittle)

Two matched groups of male University students each trained by a different method on a bicycle ergometer. One group trained at a steady pace and one did interval training at a higher pace; yet both groups did the same amount of work. The students were tested for maximum work output during a 2-min. ride before training and after two, four, and six weeks of training. Both groups improved by the fourth week and still more by the sixth week but in neither test was there a difference between groups.

26. PARSONS, David Roy. Personality Traits of National Representative Swimmers - Canada 1962. M.P.E. 1963. 84 p. (H. D. Whittle)

Results of the Cattell "Sixteen Personality Factor Questionnaire" showed that champion swimmers differ from the average population in 15 of the 16 factor areas. There appeared to be no differences in personality between champion swimmers selected to represent Canada in 1962 and champion swimmers who missed selection. Results agree with earlier studies which showed that champion swimmers apparently possess marked extremes in personality factor scores.

27. WINSLADE, Donald Kenneth. The Effect of the 8 mm. Slow Motion Color Film on the Learning of Specific Motor Skills. M.P.E. 1963. 60 p. (J. B. Pomfret)

A class of grade 9 boys who were shown basketball skills on 8mm color film made the same improvement in the Stroup Basketball test as another grade 9 class which saw live demonstrations. There were eight lessons in which a new skill was presented, each followed by practice. The same teacher did the floor and film demonstration and ran both classes identically. Both groups showed significant improvement over a control class.

28. YARR, Alan David. The Relationship of Brachial Pulse Wave Measurements to the Performance of Cross Country Runners. M.P.E. 1963. 83 p. (S. R. Brown)

Heartometer records were obtained weekly on the U.B.C. five-man team during a two-months cross-country season. The variables which reflected individual adjustment to the training regimen were systolic blood pressure, pulse pressure, diastolic surge, and rest to work ratio.

**University of California, Berkeley 4, California** (A. Espenschade)

29. MOWRER, Nancy Jean. Some Effects of a Program of Distance Swimming upon Selected Physical Fitness Measures. M.A. in Physical Education. 1962. 73 p. (A. Espenschade)

College women were tested before and after an 8-week program for breathing capacity with a spirometer, abdominal strength with a sit-up test, circulatory-respiratory efficiency with the Harvard Step Test, and body weight. During the 8 weeks, 22 women swam 24 quarter-miles, 16 participated regularly in an intermediate swimming class, and 21 controls did not participate in physical activity program. The distance swimmers improved significantly in breathing capacity and circulatory-respiratory efficiency and indicated on a questionnaire that the program improved their feeling of well-being. The intermediate swimming class improved significantly in all measures except weight and the control group showed no significant improvement.

30. WESTFALL, Karlette Vourlis. The Influence of an Auditory Pattern on Learning of Gross Motor Tasks. M. A. in Physical Education. 1963. 47 p. (A. Espenschade)
Complex foot movement patterns were learned by 24 college women to the accompaniment of rhythmic auditory patterns and by 24 controls without the auditory patterns. Fourteen from each group had previously learned simple foot patterns. Those without previous experience learned the first complex movement patterns significantly faster with rhythmic accompaniment but with previous experience in simpler tasks the difference on the first complex task was not significant. On subsequent complex tasks, the group with rhythmic accompaniment learned significantly faster than the control group, indicating that varying amounts of previous rhythmic experience facilitated learning. All groups showed a significant gain from the first five to the last five of 25 trials.

## **University of California, Los Angeles 24, California** (C. H. Young)

31. CARTWRIGHT, Berna Lou. The Effect of Hand Preference and Eye Dominance on Health Behavior of Sixth Grade Pupils. M. S. in Health Education. 1963. 57 p. (E. B. Johns)
Intercorrelations were computed between hand preference, eye dominance, grip strength, reading ability, height and weight, general condition, nutritional index, teeth, tonsils and glands, hearing, speech, and posture measures from 100 grade 6 children. The majority of students exhibited the normal unmixed dominance—hand and eye dominance on the same side. Hand preference and eye dominance correlated with emotional instability at the .001 level, with orthopedic defects at the .01 level, and with absence from school at the .05 level. But the correlations of unmixed and mixed dominance groups with reading ability, etc., were not significantly different from zero.

32. COHEN, Paul. Performance Times in Large Maze Tasks. M. S. in Physical Education. 1963. 66 p. (D. T. Handy)
Mazes 41 to 44 yards long without blind alleys were traversed 10 times each by 30 male university students while blindfolded but aided by kinesthetic cues. One maze had 90° turns and the other had a flowing pattern. The students were divided randomly into two groups. Half began on each maze and then alternated on the two trial mazes. The correlations between traversal times were significant. Observable behavioral differences in traversing the two mazes were noted.

33. CURRIE, Mary Ann. The Unique Self-Concept Characteristics of Physically Disabled High School Girls. M. S. in Physical Education. 1963. 97 p. (R. A. Snyder)
A modified form of the Self Inventory for Movement Education with 60 items rated on a five point scale was administered to 152 girls from Santa Monica and Venice High Schools who had structural, functional, and no disabilities. The split-half reliabilities for each group corrected by the Spearman-Brown Prophecy Formula ranged from .72 to .97. The functional disability group rated popularity, self-consciousness, elimination, resistance to illness, and arms significantly lower than the structural disability group. They rated weight, waist, legs, body, eating habits, buttocks, and hips negatively. They rated popularity, body build,

waist, body, and resistance to illness significantly lower than the control group. The structural disability group rated facial profile and nose significantly higher than the control group. Parents and family was rated with strongest positive feelings (level 1) by all three groups. The structural disability group consistently rated themselves most positively and the functional disability group most negatively but the scarcity of significant differences made justifiable conclusions impossible.

34. DAVIS, Richard Lane. The Effects of Weight Training on Performance in Vertical Jump. M.S. in Physical Education. 1963. 61 p. (C. H. Young)
Three groups, each of 10 sophomores and juniors in varsity basketball, were equated initially on the basis of their best Sargent Jumps. Two experimental groups underwent 6 weeks of specific weight training exercises and all groups were retested. All groups improved but the improvement of the experimental groups was significantly different from that of the control group.

35. DICKINSON, Ralph Vern. Flexibility Measurement: Range of Motion vs. Limitation of Movement in One Direction. M.S. in Physical Education. 1963. 107 p. (C. H. Young)
Range of motion and flexibility have often been considered synonymous. Many investigators have measured range of motion and some have called these flexion-extension measurements while others have indicated separate measurements. If flexibility were specific to flexion and extension movements of a joint, then range of motion (flexion-extension) would be a combination of unrelated measurements that would give a general indication of flexibility, but might also hide important limitations of flexibility requiring therapy or exercise. Absence of a significant correlation between flexion and extension measurements of the wrist and of plantar and dorsal flexion measurements of the ankle, indicated that range of motion measurements in these joints combined two independent measurements and possibly concealed serious limitations of flexibility.

36. FODOR, John Theodore. A Comparative Study of Two Approaches to Health Instruction at the College Level. Ed.D. 1963. 146 p. (E. B. Johns)
Groups of students having lecture only, varied presentation, and no health instruction for one semester were compared on the basis of objective pre- and post-test of health knowledge, a problem solving essay test, anecdotal records kept by the instructor, and student evaluation of bias by the instructor and student interest. Both classes made substantial gains in health knowledge but the varied presentation group evidenced sufficiently greater appreciation for and interest in the course to indicate that varied presentation was preferable. Students not enrolled in health classes gained insufficient knowledge about personal and community health. College level instruction therefore seemed desirable.

37. SHEARER, Helen Lorraine. Physical Activity and Arteriosclerotic Cerebral Vascular Disease. M.S. in Physical Education. 1963. 99 p. (C. H. Young)
Questionnaire-interviews were administered to 80 patients ranging in age from 45 to 90. They were in the Los Angeles VA Hospital because of cerebral vascular accidents due to arteriosclerosis. Based on the patients' histories since their first jobs, no significant relationship was found between age at which the stroke occurred and the physical or mental stress of occupations, eating, weight, or smoking habits, and a family history of either stroke occurence or heart attacks. However, 76 patients had not participated regularly in activities involving physical demands outside their work. The implication was that regular physical

exertion in leisure time activities may protect against cardiovascular accidents.

38. SOLOMON, Trudy Joan. Comparison of Two Methods of Teaching Dance to the Blind. M.S. in Physical Education. 1963. 149 p. (V. V. Hunt)
Blind and partially sighted teenagers were divided into two groups, each of five boys and five girls, on the basis of age, amount of sight, and a social dance proficiency test. They were given two 45-min. lessons per week for seven weeks. The experimental group was taught to dance to a kinesthetic, or sensory, method and the control group was given verbal instructions. The final social dance proficiency test results showed no significant difference between the methods.

39. SYKES, Juliet Harris. Identification of Mental-Emotional Factors of Teachers Influencing Elementary School Classroom Social Climate. M.S. in Health Education. 1963. 72 p. (E. B. Johns)
The hypothesis was that the mental health of teachers and the social climate of the classroom were significantly related. Data were gathered with an inventory covering the qualifications of the teacher, his appearance, the room, and the social atmosphere. Criteria were formulated from related literature. Observations were made in one primary and one higher grade classroom with excessive referrals to the school health office for what appeared to be psychosomatic illnesses. Observations were also made in two other (control) classrooms at the same grade levels. The social climate in the experimental classrooms was considerably lower. A major factor was length of teaching experience.

40. WALTON, Mary Elinor. Identification of Health Needs of Selected High School Students, Dallas, Texas. M.S. in Health Education. 1963. 126 p. (W. Sutton)
The health education needs of Negro students were determined from school health of 1,518 students who visited the school health services and 500 students in health education classes at James Madison High School. The LeMaistre Health Behavior Inventory and the Venice Health Education Evaluation Student Check List were utilized. Seniors evaluated the health education program. A need to strengthen the school health education program was indicated.

### University of California, Santa Barbara, Goleta, California (V. Skubic)

41. BAKER, Mary Ann. The Effect of Water Temperature on Body Temperature, Heart Rate, and Oxygen Uptake of Swimming Rats. M.A. in Physical Education. 1963. 110 p. (S. Horvath)
Twelve adult male Long-Evans hooded rats were measured during 10-min. swims in random order in water at 20, 37, and 42 C. Oxygen uptake was measured for three animals swimming at 37 C and recovery oxygen uptake was measured for four animals. Rats that "bobbed" swam with less energy expenditure. In water at 20 C, rectal temperature fell exponentially to 28 C in 10 min. and heart rate decreased exponentially from 458 at 1 min. to 241 at 10 min. After the swim, the rats appeared disoriented and uncoordinated; they shivered violently and increased their oxygen uptake continuously during the 43-min. recovery period. In water at 37 C, the rectal temperature rose 1 C and stabilized at 7.5 min. Heart rate increased from 366 to 487 at 1 min. and remained there. Recovering animals washed themselves actively and their recovery oxygen uptake was somewhat elevated. In water at 42 C, the rectal temperature rose exponentially to 42.2 C and heart rate rose

exponentially from 482 at 1 min. to 521 at 8 min., remaining stable thereafter. The animals appeared very weak after swimming in hot water and lay without moving for about 15 min. Their oxygen uptake was slightly higher than standard and the oxygen debt was incurred during swimming since they were inactive afterward. Oxygen uptake during the last minute of swimming was 24 ml/kg/min. and was not affected by water temperature.

42. BARKEY, Ralph Ralston. A Comparison of the One-Minute Step Test and the Three-Minute Step Test as Reflected by Circulatory Changes Occurring During a Period of Athletic Training. M.A. in Physical Education. 1963. 89 p. (A. Callon)

43. HACKETT, Layne Claire. A Study of the Effect of Form on Skill in Badminton. M.A. in Physical Education. 1963. 62 p. (S. Horvath)

44. KERR, Sharon. A Study of the Anthropology and Dance Ethnology of the Ashanti, a West African Tribe, Culminating in a Creative Dance Production. M.A. in Physical Education. 1963. 145 p. (S. Horvath)

A creative dance was composed on the basis of Ashanti anthropology representing the girls' puberty rites, the belief in animistic spirits, and the belief in mmoatis (little folk) and the "Silent Trade." A lecture-demonstration was prepared with anthropological facts concerning the Ashanti in the first half and the dances in native costume with a conga drum accompaniment in the second half. A summary of Ashanti anthropology was prepared on the basis of published materials and personal communications with members of several Ghanaian tribes. The dances were recorded on 8mm film and the accompaniment was recorded on tape.

45. NASH, Gordon David. Comparison of Step Tests During Physical Training. M.A. in Physical Education. 1963. (R. Rochelle)

46. RIEBEL, Susan. The Evolution of the Natural Program of Physical Education with Special Reference to the Role of Jesse Feiring Williams. M.A. in Physical Education. 1963. 80 p. (J. Hodgkins)

47. STORRS, Patricia. The Importance of Platonic Ethics for Competitive Athletics. M.A. in Physical Education. 1963. 89 p. (J. Hodgkins)

The ethics of Plato were determined from The Republic and secondary sources. A single competitive athletic code was constructed from the NCAA code and the interscholastic and intercollegiate codes for football, basketball, and baseball. Comparison showed a high degree of relationship between Platonic ethics and the ethics of competitive athletics although this had not been demonstrated previously. A code of ethics based on Platonic ethics was prepared for competitive athletics and sportsmanship was given a Platonic definition.

48. WILMORE, Jack Harrison. Alterations in Peripheral Blood Flow Consequent to Maximal Exercise. M.A. in Physical Education. 1962. 65 p. (S. Horvath)

Blood flow recovery patterns were compared after an exhaustive bicycle ergometer ride at 1500 kgm/min. with unrestricted and arrested circulation in the lower limbs. Arrested circulation reduced the mean work capacity of the subjects from 1/4 to 1/6 of normal work capacity. The mean maximum heart rates were similar but the heart rate recovery was much faster after exercise with the circulation arrested because the duration was shorter. The blood flow patterns on restoration of circulation after it had been arrested for 2 min. showed a short interval of reactive hyperemia and a longer interval of lower-than-resting blood flow—similar to all previous reports. The mean blood flow recovery curves were not significantly different despite the marked difference in the time required to reach corresponding levels of fatigue. Recovery curves under both conditions had two distinctly different rates with independent, exponential equations. Although blood flow in the calf had returned essentially to its pre-exercise resting level at the completion of the experiment, heart rates were still 9 to 20 beats/min. above their pre-exercise level.

**University of Colorado, Boulder, Colorado** (E. Willis)

49. CAMP, Billie Ann. The Reliability and Validity of a Single-Hit Repeated Volleys Test in Volleyball and the Relationship of Height to Performance on the Test. M.S. in Physical Education. 1963. 49 p. (E. Abbott)

One hundred and six high school girls were given, on two successive days, a single-hit repeated volleys test at each of three distances. Reliability coefficients were .92, .89, and .88 when the test was given at 3, 5, and 7 ft., respectively. Little relationship was found between height and the distance at which the test was taken. Rating of ability to volley in a game situation correlated fairly highly with the test scores made at each distance.

50. DUFF, Barbara Arlene. The Relative Effectiveness of Physical Practice and Combined Mental and Physical Practice in Improving the Underhand Free Throw as Used in Basketball. M.S. in Physical Education. 1963. 49 p. (B. McCue)

One hundred and twenty-two high school girls were divided into two comparable groups on the basis of scores made on an initial test of 20 underhand free throws. During each of 12 practice periods, one group mentally practiced making 10 free throws and then made 10 free throws; the other group made 20 free throws. The difference between the mean gains of the two groups was not statistically significant.

51. FERGUSON, Beth Allen. Personality Differences Between Adolescent Girls of High and Low Motor Performance. M.S. in Physical Education. 1963. 87 p. (E. Abbott)

Of the 278 grade 11 girls who were given Scott's Test of Motor Ability, the 69 who scored in the upper quartile and the 69 who scored in the lower quartile had their personality characteristics assessed by the California Psychological Inventory and by four classroom teachers. The high motor ability group scored significantly higher than the low motor ability group on the dominance, sociability, self-acceptance, and communality scales of the Inventory. The teachers' ratings indicated that the girls in the former group were motivated and self-reliant in the classroom and that those in the latter group were purposeful and cooperative but retiring and unresponsive.

52. HERGERT, Loretta. The Effects of Participation in Two Types of Programs Upon the Arm and Shoulder Strength of Boys. M.S. in Physical Education. 1963. 93 p. (E. Willis)

Forty-five boys in a grade 5 class were assigned by chance to two groups. The control group, selected by chance, participated in a program of instruction and practice in soccer skills and games. During the first 5 min. of each class period, the experimental group practiced six isometric exercises designed to increase arm and shoulder strength. The mean improvement made by the experimental group was significantly

(.01 level) higher than that of the control group although both groups made statistically significant (.01 level) improvement in arm and shoulder girdle strength.

53. RICCIO, Mary Ann. The Relative Effectiveness of Two Types of Practice Devices on Learning the Forehand and Backhand Tennis Drives. M.S. in Physical Education. 1963. 46 p. (Ann Sprague)
Forty-one college women enrolled in beginning tennis classes were divided into two groups. During 8 class sessions, one group practiced hitting balls against a backboard and the other group hit balls projected by a Ball-Boy. No statistically significant difference was found between their achievement on the Broer-Miller Forehand and Backhand Test.

**Florida State University, Tallahassee, Florida** (P. W. Everett)

54. CHRIETZBERG, Agnes L. The Effects of Mechanical Vibration on Spot Reduction. M.S. in Physical Education. 1963. 77 p. (H. Campney)

55. EDINGTON, Dee. The Relative Effectiveness of Two Routines of Progressive Resisting Exercises for the Arms in Relation to Speed in Swimming the Crawl Stroke. M.S. in Physical Education. 1963. 44 p. (F. Cole)

56. GARRISON, Levon E. Electromyographic-Cinematographical Study of Muscular Activity During the Golf Swing. Ed.D. in Physical Education. 1963. 140 p. (G. Fox)

57. PLEASANTS, Francis, Jr. A Comparison of Methods of Metering and Sampling Expired Air in the Human During Exercise Metabolism Experiments. Ed.D. in Physical Education. 1963. 104 p. (P. Everett)

58. WILLIAMSON, Mary Phylis. Recreation and the Alcoholic: A Study of the Recreation Pursuits of Alcoholics. M.S. in Recreation. 1963. 64 p. (W. Tait)

**University of Florida, Gainesville, Florida** (W. H. Solley)

59. MASON, Charles Frank. An Investigation of Selected Physiological Parameters During Terminal Stages of Severe Exercise. M.A. in Physical Education. 1963. 92 p. (E. Phillips)
Nine physiological parameters were examined in five subjects who were divided into a sedentary control group and an experimental group that trained for 8 weeks. The results showed definite patterns in all parameters and training had a beneficial effect on exercise diastolic blood pressure, heart rate, and oxygen consumption and on the recovery rate of blood pressure and heart rate.

60. QUINN, Lee Walter, Jr. Factors Associated With Failure in Physical Education Due to Unsatisfactory Attendance. M.A. in Physical Education. 1963. 58 p. (B. Stevens)
The experimental group consisted of students who failed in physical education because of unsatisfactory attendance but did acceptable work in other areas. The MMPI was used to measure personality. Academic ability was determined by summer percentiles on the Senior Placement Test and achievement was determined by grade point averages. The

Wear Inventory was used to determine attitudes and subjective factors concerning non-attendance were assessed with a questionnaire. The experimental group was significantly superior in ability but their achievement was not significantly different from that of the control group. The experimental group had significantly less favorable attitudes and some associated subjective and personality factors. Their non-attendance was rationalized as a need to improve their grades.

61. SHIRES, Thomas Edward. A Comparative Study of Wrestling and Soccer With Regard to Physical Fitness and Cardiovascular Endurance. M.A. in Physical Education. 1963. 51 p. (C. Boyd)
The subjects were men in required physical education classes at the University of Florida. Wrestling and soccer contributed significantly to improvement in cardiovascular endurance but the gain in physical fitness was not significant and neither sport appeared superior to the other.

62. URQUHART, Arlene Joan. The Effects of Selected Amounts of Sleep Loss on Motor Performance. M.A. in Physical Education. 1963. 94 p. (W. Solley)
Initial test results after normal sleep were used as a basis for separating 43 college women into three equated groups. They were retested after one group's sleep was reduced by one third, another by two thirds, and the third was deprived of sleep for one night. Analysis of variance showed that the experimental sleep conditions had no significant effect on running speed, cardiovascular endurance, hand-eye coordination, leg and shoulder power, agility, or general motor ability.

### Fort Hays State College, Hays, Kansas (W. Kroll)

63. HARRIS, Merle. Analysis of Sports Skills of Male Freshmen at Fort Hays Kansas State College (1960-1961). M.S. in Physical Education. 1961. 77 p. (W. Kroll)
Johnson's General Sports Skills Test was administered to 253 men. The Kansas sample was compared with Johnson's T-score scale for ratings and was found to be significantly above average in general sports skills according to chi square at the .01 level. A contingency coefficient of .48 was found between high school sports experience and general sports skill classification. Although none of the group had ever had any experience in soccer, they scored at the 60th centile for the soccer test item.

64. McCOLLOUGH, Jerry I. Methods of Assessing Child Growth. M.S. in Physical Education. 1961. 53 p. (W. Kroll)
A cricitical review of the literature was made on the available methods of assessing child growth in the elementary and secondary schools.

65. MORRIS, Harold H. The Effect of Order Upon a Selected Measure of Human Strength. M.S. in Physical Education. 1961. 68 p. (W. Kroll)
Thirty-one male subjects performed five isometric wrist flexion trials, spaced 1 min. apart, for three successive days. Analysis of variance revealed significant differences between strength on days one and three, and between trials 1 and 3-4-5, 2 and 5. Mention was made of possible causes for the effects noted.

66. PALMER, Wendell L. An Evaluation of a Speed-a-Way Knowledge Test. M.S. in Physical Education. 1961. 101 p. (W. Kroll)
An analysis was made of a written examination on a speed-a-way test given to 279 women students enrolled in a fundamentals class. Item validity (Flannagan), item difficulty, and functioning of alternatives

analyses were made. Considerable departure from a post-specified table of specifications for test content and actual test content was demonstrated.

67. RAY, Arthur L. Cross Transfer Effects of Isometric Strength Measurement Schedules. M. S. in Physical Education. 1962. 63 p. (W. Kroll)
Twenty-two male high school students were measured for isometric wrist flexion strength. Group A was measured daily for a week on the right wrist, then measured similarly on the left wrist. Group B reversed the order. Five trials spaced 1-min. apart were given on each occasion. No evidence of cross-transfer was found for either group.

68. STRECK, Bonnie. An Analysis of the McDonald Soccer Skill Test as Applied to Junior High School Girls. M. S. in Physical Education. 1962. 75 p. (W. Kroll)
The McDonald Soccer Skill Test was administered to 265 junior high school girls. Local norms were constructed. Chi square for normality was significant (.05), indicating that the test was not able to discriminate between different levels of soccer ability at the junior high school level for girls. Evidence of trial effects was also noted.

69. WILLIAMS, Dale E. Cross Transfer Effects Utilizing a Unilateral Maximal Isometric Strength Measurement Schedule. M. S. in Physical Education. 1963. 74 p. (W. Kroll)
Two matched groups, each of ten subjects, were given five trials daily of isometric wrist flexion. Group A was measured for five days on left hand, then five days on right hand. Group B reversed the sequence. Pretests for strength were followed by two weeks of inactivity before the experimental sessions began. No cross transfer or cross-education occurred in either group.

**Fresno State College, Fresno, California**

70. BOURDET, Malcolm Leonard. A Coaching and Playing Guide for Infielders in Baseball, with Emphasis on Fundamentals and Drills. M. S. in Physical Education. 1961. 156 p. (Pape)

71. CORNETT, H. R. Donald. Pertinent Problems in Establishing an Adequate Physical Examination and Follow-Up Program in Secondary Schools. M. S. in Physical Education. 1962. 72 p. (Pape)

72. DeWING, Ronald Sydney. The Effect of Warm-Up Upon the Reaction Time of Trained Athletes. M. S. in Physical Education. 1963. 30 p. (Johnson)

73. FRIES, Bobby Conrad. Methods of Organization for Coaching High School Track and Field. M. S. in Physical Education. 1963. 159 p. (Johnson)

74. HARPER, Albert A. The Development and Use of the Challenge Board as an Aid in Rating Basketball Skills. M. S. in Physical Education. 1962. 46 p. (Johnson)

75. MATHEW, Harry Allen. An Evaluation of the Physical Fitness Testing Program in the Bakersfield (California) Elementary Schools. M. S. in Physical Education. 1963. 173 p. (Johnson)

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**George Peabody College for Teachers, Nashville 5, Tennessee** (R. Pangle)

76. DAVIS, Robert McCue. A Comparison of Three Approaches to Increasing Physical Fitness in Students of Low Fitness. Ed.D. in Physical Education. 1963. 114 p. (S. B. Sudduth)
Students below the median on the Indiana Motor Fitness Test were randomly assigned to three treatments. All groups practiced the high jump, broad jump, shot put, and 440-yd. dash twice a week for three months. Results of the post-test showed that the group which had 15 min. of additional practice with the Bunn Technique improved significantly more than the group which had 15 min. of additional calisthenic practice and the group with no additional practice. The latter two groups did not differ significantly.

77. LUCAS, Melvin Allen. An Evaluation of the Physical Education Professional Preparation Program at Troy State College 1950 - 1959. Ed.D. in Physical Education. 1963. 139 p. (S. B. Sudduth)
Physical education teacher preparation at Troy State College was evaluated on the basis of a critical incidence questionnaire and interview returns from 30 male graduates (12 percent) between 1950 and 1959. The program as a whole seemed adequate but strengthening was recommended in guidance, coaching, public relations, solving practical problems in less than ideal situations, communication between department and graduates, and provisions for development of personal skill.

78. LUCKE, Edward James. An Evaluation of the Professional Preparation Program in Health and Physical Education at Lenior Rhyne College. Ed.D. in Physical Education. 1963. 205 p. (N. L. Warren)
Three hundred and thirty-seven behaviors considered important for health and physical educators were reduced to 64 by a group of experts. Male major graduates who received degrees between 1950 and 1960 were surveyed by questionnaire. The professional preparation program appeared effective in preparing students in 12 behaviors and ineffective in 15 behaviors on the basis of 35 usable returns.

**Illinois State University, Normal, Illinois** (M. L. Jones)

79. BRYAN, Mary Mortimore. Contribution of Curricular Activities to Motor Fitness. M.S. in Physical Education. 1963. 120 p. (M. Gray)
Standing broad jump, sit-up, side step, and bent arm hang tests were administered to 126 grade 8 girls in Bloomington Junior High School after each of seven activity units and to 46 girls before and after eight weeks without physical activity classes. Composite T scores were calculated on the basis of the first and last test scores. Tumbling produced the greatest gains. Significant gains in three of the four tests resulted from modern dance, volleyball, badminton, and coeducational social dance units. Test results remained essentially unchanged following a combined unit of basketball and coeducational volleyball. The period without physical activity classes produced no apparent decrement.

**University of Illinois, Urbana, Illinois** (A. W. Hubbard)

80. BANKS, Marshall D. The Effects of Hip, Knee, or Ankle Extensor Development on Vertical Jumping. M.S. in Physical Education. 1963. 32 p. (A. W. Hubbard)

81. BECHTEL, Linwood G. *The Effects of Soccer Training on the Electrocardiogram*. M.S. in Physical Education. 1963. 49 p. (T. K. Cureton and A. J. Barry)

82. BROD, Lester J. *Effects of Various Isotonic and Isometric Training Programs on Pressing Strength*. M.S. in Physical Education. 1963. 80 p. (C. O. Jackson)

83. BURNS, Howard A. *Improving the Posture of Boys*. M.S. in Physical Education. 1963. 45 p. (T. K. Cureton)

84. CAPORAL, Mary L. *A Comparison of Various Methods for Developing Strength in Arm and Shoulder Muscles of College Women*. M.S. in Physical Education. 1963. 45 p. (O. G. Young)

85. CILLIO, Anthony R. *An Evaluation of the Physical Activities and Fitness of Air Force Officers*. M.S. in Physical Education. 1963. 78 p. (T. K. Cureton)

86. CLARKE, Kenneth Stevens. *Caloric Requirements of Traumatic Paraplegics*. Ph.D. in Health Education. 1963. 115 p. (H. Hoyman)

87. DEMPSEY, Cedric W. *A Ballistocardiographic Investigation of Cardiac Responses of Boys to Physical Training and Wheat Germ Oil*. 1963. 196 p. (T. K. Cureton)

88. FANCHER, Carlton Merwin. *A Study of Selected Driver Education Programs to Determine Effectiveness of Instruction*. M.S. in Health Education. 1963. 60 p. (A. Florio)

89. FARINA, Alfreda. *The Effect of Variable Rotometer Load on Pulse Rate Recovery Factors*. M.S. in Physical Education. 1963. 50 p. (A. W. Hubbard)

90. GOEGLEIN, Jerry W. *Physical Defects in Young Boys*. M.S. in Physical Education. 1963. 59 p. (T. K. Cureton)

91. GRUENINGER, Robert W. *The Contributions of Isometric and Isotonic Contractions to the Development of Static and Dynamic Strength in Young Boys*. M.S. in Physical Education. 1963. 169 p. (T. K. Cureton and A. J. Barry)

92. HAGBERG, Sandra J. *A Study of the Relationship Between Social Popularity and Physical Fitness of Boys and Girls in Grades 3 Through 5 in a Selected Illinois Community*. M.S. in Physical Education. 1963. 63 p. (O. G. Young)

93. HASKELL, William L. *The Relationship Between Certain Objective Tests of Motivation, Motor Performance Measures, Highest Oxygen Intake, Oxygen Debt, and "All-Out" Treadmill Run Time*. M.S. in Physical Education. 1963. 139 p. (T. K. Cureton and A. J. Barry)

94. HODGE, Douglas A. *The Effects of a Program of Jumping and Rope Skipping Exercise and a Facilitatory Stimulus on the Leg Strength and Leg Power of Young Boys*. M.S. in Physical Education. 1963. 73 p. (T. K. Cureton)

95. HOWARD, Michael E. *A Case Study for the Lakeview Center for*

the Arts and Sciences in the Peoria, Illinois, Park District. M.S. in Recreation. 1963. 79 p. (C. K. Brightbill)

96. HOYMAN, Annelis S. Prediction of Physical Endurance of College Women from Metabolic Variables. Ph.D. in Physical Education. 1963. 147 p. (T. K. Cureton)

97. KELLER, Roy J. A Comparison of Two Methods of Teaching Physical Education to Secondary School Boys. Ph.D. in Physical Education. 1963. 110 p. (C. O. Jackson)

98. LAMBERT, John E. The Status of Swimming Programs in Selected High Schools in Illinois. M.S. in Physical Education. 1963. 53 p. (H. E. Kenney)

99. LEHMANN, David Walter. The Effects of Selected Noise Levels as Measured by Psychological Performance and Energy Expenditure. M.S. in Health Education. 1963. 80 p. (W. Creswell)

100. MILLER, Elizabeth A. An Analysis of Recreation for the Ill and Handicapped in Selected Local Public Recreation Systems. M.S. in Recreation. 1963. 98 p. (C. K. Brightbill)

101. MOSTOW, Michael Herbert. The Effects of Various Levels of Concentrations of Alcohol in the Blood on Simulated Driving, Including Tests for Hand Steadiness, Brake Reaction Time, and Vision. M.S. in Health Education. 1963. 90 p. (A. Florio and W. Huffman)

102. NAYLOR, Susan C. The Effectiveness of a Test-Centered Method of Teaching Beginning Volleyball to University Women. M.S. in Physical Education. 1963. 89 p. (O. G. Young)

103. PEKARA, Jean H. A Study of the Relative Effectiveness of Two Types of Anchor Points Used in Beginning Archery. M.S. in Physical Education. 1963. 28 p. (O. G. Young)

104. PETERS, Martha L. A Study of the Recreation Background of 200 Air Force Hospital Patients. M.S. in Recreation. 1963. 80 p. (C. K. Brightbill)

105. PONZO, Zander. The Effects of a Mile Run Training Program on Selected Aspects of the Health of a Young Man. M.S. in Health Education. 1963. 109 p. (H. Hoyman and W. Huffman)

106. SKINNER, James S. The Effects of a Progressive Endurance Exercise Program on the Serum Lipids of Middle-Aged Men. Ph.D. in Physical Education. 1963. 275 p. (T. K. Cureton)

107. SKINNER, Madeline Dasch. The Reading Ease and Human Interest Readability of Eight High School Driver Education Textbooks: Flesch Index. M.S. in Health Education. 1963. 84 p. (A. Florio and W. Huffman)

108. SOLOMON, Judith C. A Study of the Ways and Means of Using Fine Arts in College Union Programming. M.S. in Recreation. 1963. 75 p. (C. K. Brightbill)

109. SOMPRAYOON, Suchart. A Comparison of Health Misconceptions Among Selected Groups of Fifth Grade Children in the United States and Thailand. M.S. in Health Education. 1963. 96 p. (G. Couch)

110. STALLMAN, Robert K. The Metabolic Cost of the 5-BX Plan for Physical Fitness. M.S. in Physical Education. 1963. 125 p. (T. K. Cureton)

111. STERN, Barry E. The Effects of Frequency of Exposure to Training on Endurance Performance and Selected Cardiovascular Fitness Tests. M.S. in Physical Education. 1963. 108 p. (T. K. Cureton and A. J. Barry)

112. WARSHAWSKY, Lawrence. A Comparative Time Study of Two Backfield Stances in Football. M.S. in Physical Education. 1963. 55 p. (H. E. Kenney)

113. WIGGETT, Ronald G. The Effects of a Sports-Fitness Program on the Chest Measurements of Young Boys. M.S. in Physical Education. 1963. 74 p. (T. K. Cureton)

114. WILSON, Joanne. Rating Scale and Age Trends for Women's Quiet Cardiovascular Tests. M.S. in Physical Education. 1963. 62 p. (T. K. Cureton)

**Indiana University, Bloomington, Indiana** (K. W. Bookwalter)

115. AVENT, Henrietta Hemstead. Tests of Static and Dynamic Strength for Girls Nine to Twelve Years Old. P.E.D. 1963. 154 p. (G. F. Cousins)
Height, weight, and 28 tests commonly used to measure strength were administered to 101 nine- and ten-year-old and 100 eleven- and twelve-year-old Caucasian girls. Regression equations were set up for estimating the following: general static strength based on McCloy's unweighted-strength score and dynamometrical measures; general dynamic strength based on the average of T scores of five dynamic strength measures and 10 dynamic strength variables; and total static and dynamic strength based on the average of T scores derived from dynamometrical measures and the 5-item dynamic strength measures. Norms were established.

116. BARNEY, Vernon S. The Effects of Variations of Dynamic Exercise on Muscle Development. P.E.D. 1963. 112 p. (A. T. Slater-Hammel)
Approximately 170 college men were randomly assigned to 12 experimental groups and one control group. The quadriceps muscle was exercised at the same rate in all groups for 18 exercise sessions in a 6-week period. Significant gains in strength of the quadriceps muscle were produced by the treatments but no significant differences resulted between treatment combinations. Less time was required for the left leg to reach maximum strength than was required for the right leg.

117. BEAVER, Lyle B. Evaluation of Selected Administrative Practices for Cooperative Relationships Between University and Public Recreation Departments. Re.D. 1963. 227 p. (T. R. Deppe)
Administrators of 31 university and 27 public recreation departments rated 112 practices and 28 deterrent factors. The two groups of administrators agreed generally on their ratings of desirability of practices for both local and general use. Student field work practices were the focal points for most cooperative relationships between university and public recreation departments.

118. BISHOP, Roger Martin. The Origin and Development of Adapted

Physical Education in the United States. P.E.D. 1963. 255 p.
(J. B. Daugherty)
The growth of adapted physical education in the United States was traced with regard to: outstanding personalities, economic and social factors, trends, legislation, and the program in general. The material was classified into: practices in ancient, primitive, or early civilizations; physical education in other countries; the inception and early development of adapted physical education in the United States until World War I, from World War I to World War II, and from World War II to 1960. Dedicated and qualified persons in public and private agencies were a prime factor in the development of acceptable adapted physical education programs.

119. BRIGHAM, Robert Joseph. The Relative Effectiveness of Three Methods of Muscle Contractions in Developing Muscular Strength and Endurance of the Triceps Muscle. P.E.D. 1963. 134 p.
(M. C. Wakefield)
Sixty randomly selected subjects were given 6 weeks of exercise with intermediary, isotonic, or isometric contractions at maximum resistance for three sets of 10 repetitions on the Elgin Exercise Table. Significant gains in strength of the left and right triceps muscles were made by all groups. No significant differences were found between the three exercise groups in terms of their triceps endurance or elbow flexibility.

120. BRIGHTWELL, David S. The Effect of Coeducational and Segregated Classes on Tennis Achievement. P.E.D. 1963. 79 p.
(J. B. Daugherty)
Sixty-two randomly selected freshmen men and women were instructed in beginning tennis skills in separate classes for women and men and in two coeducational classes. Statistically significant improvements between the initial and final mean scores achieved on the wall volley test of tennis ability were resulted for all classes. Men and women learned beginning tennis skills equally well in either segregated or coeducational classes.

121. CARR, Marion T. An Instrument for Use in Evaluating the Basic Concentrated College Health Course. H.S.D. 1963. 101 p.
(J. K. Rash)
Items which would indicate a good health course were validated and weights were assigned through returns from a jury of 40 experts in college health education. The reliability of the validated and weighted items was found to be very high when used by both outside evaluators and by self-evaluators. Objectivity was highest with the outside evaluators.

122. CHARLSON, Vernon R. The Need for Family Life Education on the Secondary School Level. H.S.D. 1963. 134 p. (J. K. Rash)
An inventory based upon Pederson's 199 concepts of family life education and 21 family life education areas was administered to 1,519 students, 166 parents, and 23 clergymen. Parents and clergymen generally agreed on what students needed to learn about family life education but students disagreed strongly with parents and clergymen. Students, parents, and clergymen generally would give strong support to the schools if a course of family life education, including sex education, were offered to students on the secondary school level.

123. CHURCH, Kenneth R. The Effect of Different Teaching Methods and Spot of Aim Technique on Bowling Achievement of College Men. P.E.D. 1963. 198 p. (M. C. Wakefield)
Sixty inexperienced college men were randomly assigned to four groups and the groups were randomly assigned to: general instruction with conventional spots, film strips with conventional spots, general instruction

with a mechanical aid, and filmstrips with a mechanical aid. The groups met 50 min. a day, 3 days a week, for 8 weeks. All subjects were required to use the four-step approach and the hook ball delivery. Bowling achievement was equally effective under any of the four treatment conditions. However, group learning curves indicated that the use of the mechanical aid was consistently more advantageous than conventional lane markings and that filmstrips for repetition of group instruction after 20 games appeared highly beneficial for improving bowling achievement.

124. HARVEY, Robert R. An Evaluation of the Practices of Selected Ethically Questionable Actions by College Athletic Coaches. P.E.D. 1963. 399 p. (K. W. Bookwalter)
Graduated varsity lettermen (728) from a Methodist, denominational but non-Methodist, and a state college or university chosen from each of four midwestern states indicated the extent to which their coaches practiced the actions. More unethical practices were reported for basketball and baseball coaches in colleges under 1,000 students than for coaches in larger institutions. Coaches of basketball and football were reported more frequently than were track and baseball coaches.

125. JENSEN, Clayne. A Study of the Relative Effect of Five Different Training Methods on Swimming. P.E.D. 1963. 85 p. (G. F. Cousins)
Sixty college men were assigned to 5 groups equated initially in swimming speed. Groups were assigned to the following treatments: swimming 5 days per week, weight training 5 days per week, swimming 3 days and weight training 2 days per week, swimming 2 days and weight training 3 days per week, and weight training and swimming 5 days per week. None of the final differences between the five treatments was significant, and only weight training and swimming 5 days per week resulted in a statistically significant improvement in the 40-yd. swim.

126. JONES, Herbert L. The Relative Effectiveness of Three Selected Methods of Instruction in Health Education. H.S.D. 1963. 228 p. (D. J. Ludwig)
One hundred and thirty-five college freshmen were assigned at random to three groups and treatments were randomly assigned to groups. Each group met four times weekly for 11 weeks and all were taught by the investigator following a pilot study the quarter before. The methods used were the lecture, lecture-discussion, and small group discussion. All three methods were effective in increasing health knowledge. The lecture-discussion method seemed superior.

127. LEATHERS, Clyde M. Responsibilities of Selected Voluntary Health Agency Personnel in the State of Indiana. H.S.D. 1963. 212 p. (J. K. Rash)
Health agency personnel (25) were interviewed in refining a checklist. The 126 job responsibilities were rated by 32 persons as to desirability, cruciality, and degree of involvement. Of the 126 job responsibilities, 110, or 87.31 percent, were rated as desirable and crucial. The most frequently performed responsibility was "Attend workshops, institutes, and training courses for increased proficiency," while the most highly rated responsibility was "Help plan fund-raising activities for the agency."

128. McQUARRIE, Agnes M. Community Use of Selected Public Elementary Schools in the State of Washington. Re.D. 1963. 361 p. (G. G. Eppley)
Personnel were interviewed in 100 randomly selected elementary schools and 12 full-time, year-round municipal recreation departments in first, second, and third class cities of Washington. New schools have been

built to include facilities which will make possible greater community use of school buildings. School and recreation personnel have become increasingly cognizant of the importance and advantages of coöperative agreements between school districts and municipal recreation departments.

129. MILLER, Fred L. An Investigation of the Impact Absorbing Qualities of Selected Football Helmets. P.E.D. 1963. 166 p. (J. B. Daugherty)
The peak acceleration, expressed in G's, on the player's head was obtained under game-type conditions. This blow was reproduced in the Materials and Structural Laboratory, School of Civil Engineering, Purdue University. This peak blow was increased and decreased 25 percent to obtain two striking velocities from which the mean peak acceleration of 17 football helmets was obtained with three replications at each of six impact positions. Helmets with and without exterior ensolite padding were tested to determine the effectiveness of the padding. The football helmets generally lacked protective qualities at the lower back, back, and front positions. The helmet construction offering the best protection to the wearer consisted of a fiberglass helmet shell, a non-resilient styrofoam liner, and a soft rebound liner for comfort.

130. RENO, John Eugene. An Evaluation of the Duties of Athletic Directors in Small Colleges in Selected States of the Midwest. P.E.D. 1963. 228 p. (M. C. Wakefield)
Forty-three athletic directors in colleges with enrollments of 2,500 or less in four states were interviewed concerning the performance of 211 duties. 93 percent of the athletic directors coached athletic teams and 79 percent taught professional and service courses in physical education. Duties related to property and equipment were the mostly commonly performed.

131. STERLE, David E. Attitudes Toward Important Issues Involving Principal National Professional Organization in Recreation. Re.D. 1963. 166 p. (T. R. Deppe)
An attitude scale was submitted to a random sample of 492 recreation executives from a nation-wide list. Only 313 executives responded. A need for unification of national professional organizations was indicated, as was a need for recreation personnel and park personnel to belong to a single national professional organization. Some professional organizations were not meeting the needs of municipal, metropolitan, and county recreation executives as national recreation organizations.

132. STERLE, Mary J. R. The Relative Effectiveness of Four Activity Courses on the Development and Maintenance of Physical Fitness in College Freshmen Women. P.E.D. 1963. 184 p. (N. L. Leyhe)
Sixty-eight freshmen women were randomly assigned to four groups. The groups met for 50 minutes, twice a week, for 7.5 weeks. Body dynamics, body conditioning, movement fundamentals, and badminton were equally effective in developing and maintaining abdominal strength and endurance as measured by curl-ups. Body conditioning and badminton were equally superior to the other activities in developing and maintaining arm and leg strength and endurance as measured by modified push-ups and distance jumped.

### State University of Iowa, Iowa City, Iowa

(L. E. Alley and D. R. Mohr)

133. ALLERDICE, Mary Ellen. The Relationships Between Attitude

Toward Physical Education and Physical Fitness Scores and Sociometric Status. M.A. in Physical Education. 1963. 60 p. (D. Mohr)
The Kneer Adaptation of the Wear Attitude Inventory and the AAHPER Youth Fitness Test were administered to each of 202 girls in grades 8 and 9 at the Fairfield, Iowa, Junior High School during the spring of 1962-63. Sociometric status was determined by applying the Cook Sociometric Status Index to questionnaires completed by each subject. The entire group did not demonstrate any substantial relationship between attitude toward physical education and degree of physical fitness. However, the 20 girls with the highest attitudes toward physical education had a significantly higher degree of fitness than the 20 girls with the most negative attitudes. An adverse attitude toward physical education did not seem to lower a girl's social status within the physical education class, nor did a positive one raise her status.

134. APPLE, Frances V. Comparison of Retention of Tennis Skills by College Women of High Motor Ability and Low Motor Ability. M.A. in Physical Education. 1963. 48 p. (D. Mohr)
All women in the fall beginning tennis classes at the State University of Iowa were given the 3-item Scott Motor Ability Test. Composite T scores of 57 and 44 were used to separate the top quartile in motor ability (N = 25) and bottom quartile (N = 18). Subjects were given the Modified Dyer Backboard Test and a departmental serving test in November at the end of a fall tennis unit lasting 8 weeks and again in April after 20 weeks of non-practice. Mean losses in skill on both tests by both groups were not significant. Sufficient retention was evident in both the high and low skill groups to continue the sport after appreciable non-practice.

135. ANZALONE, Charlene B. A Manual for Teaching Badminton to Beginners and Intermediates. M.S. in Physical Education. 1963. 142 p. (D. Mohr)
The manual was prepared on the basis of a review of the literature, questionnaire returns from selected badminton teachers around the country, and personal experience in teaching and tournament play. The manual contained a brief history, equipment, fundamentals, bird flights, common faults, strategy and team play, ettiquette, tournament play, evaluation, teaching units, and a glossary. Illustrations were prepared from motion pictures taken during actual play.

136. BABCOCK, F. Carl. Physical Fitness of Delaware Boys and Girls in Grades Five Through Twelve. M.A. in Physical Education. 1963. 61 p. (L. E. Alley)
Age, height, weight, and AAHPER Physical Fitness scores were obtained from 6,761 boys and girls 10 to 17 years of age in grades 5 through 12. Except for shuttle runs by boys and girls, the Delaware norms between the 25th and 75th centiles were equal to or higher than the national norms on the basis of either age or classification index. The Delaware norms also tended to be higher at the 50th and 100th centiles. Differences between small, medium, and large schools were too scattered to indicate consistent trends.

137. BARHAM, John W. Posture Programs for Elementary-School Children. M.A. in Physical Education. 1963. 42 p. (D. R. Casady)
One grade 4 and 5 physical education class (N = 62) was designated by chance as the "Posture Group" and another class (N = 55) as the "Nonposture Group." The Posture Group devoted 20 percent of each class period to posture training activities throughout the school year. Their mean gain in posture ratings was significantly better at the .01 level

than that of the group devoting all their time to physical education activities.

138. COFFEY, Margaret A. The Development of Professional Preparation in Physical Education for Women in the Colleges and University of the Northwest. Ph.D. in Physical Education. 1963. 239 p. (M. G. Scott)
All institutions in Washington, Oregon, Idaho, and western Montana with four-year undergraduate and graduate programs were studied. The material included purposes, curriculums, requirements, facilities, degrees, professional costume, student activities, and numbers of graduates. The professional training, degrees, experience, and contributions of faculties were investigated. Recognizable trends in the development from a Department of Physical Culture to a Department of Health, Physical Education, and Recreation were indicated.

139. DICKINSON, Arthur L. Resistance-Exercise for Development of Strength of Muscles That Extend Leg at Knee: A Comparative Study of Three Methods. Ph.D. in Physical Education. 1963. 70 p. (G. M. Asprey)
Sixty-two men in required physical education at Arizona State University were divided into a control group and three exercise groups using either isotonic, progressive resistance exercise daily, these exercises twice daily, or one 15-sec. maximal isometric contraction twice daily. Mean strength gains for the three exercise groups were significant at the .01 level. The decrease in the Clarke Strength Decrement Index was greater for the group using isotonic exercise twice daily than once daily. Mean strengths for the four groups were significantly lower (p = .01) 36 weeks after the termination of the exercise program.

140. DRUM, Barbara A. The Construction of a Film as an Instructional Aid for Training Women Basketball Officials. M.A. in Physical Education. 1963. 87 p. (M. Barnes)
The frequency with which beginning officials called correctly, incorrectly, and missed fouls and violations according to the 1962-63 DGWS rules was determined by charting their incidence. A 30-min., black and white, sound film was prepared with an analysis of fouls and violations commonly missed by beginning officials in one section and a demonstration of skillful officiating by two nationally rated officials in the other section. Fourteen students enacted the script after previous practice. The film content and narration were evaluated by members of the DGWS Officiating Section executive board.

141. DUTTON, Shirley A. Guidance Problems Encountered by Women Physical Education Teachers in Iowa Secondary Schools. M.A. in Physical Education. 1963. 83 p. (D. Mohr)
Questionnaires were sent to women physical education teachers and 92 percent responded. The most frequent problems concerned health, physical education, and personal matters. The teachers considered themselves adequately or somewhat adequately qualified to counsel the girls. A large majority indicated that guidance and counseling courses should be included in the undergraduate program and that they would take such courses in graduate work.

142. EDGERTON, Victor Reggie. Performances in a 400-Yard Swim After Varying Intervals of Rest. M.A. in Physical Education. 1963. 25 p. (L. E. Alley, R. Allen)
The effect of four different rest intervals (24 hours, 48 hours, 72 hours, and 96 hours between the final workout and performance) on the time required to swim 400 yds. on each of three consecutive days was deter-

mined for freshman swimming team members who had trained for 12 weeks. The data were collected over a period of 16 weeks. No significant differences were found at the .05 level.

143. HARRIS, Judson B., Jr. Exercise in Formative Period in Relation to Ability to Develop Endurance in Postformative Period: A Study with Rats. Ph.D. in Physical Education. 1963. 88 p. (L. E. Alley, G. E. Folk)
Seventy-five male albino rats were divided into five groups when 25 days old. Four groups engaged in vigorous swimming programs of from 5 to 22 weeks duration and the fifth group was confined to a sedentary life in cages. After 22 weeks, all groups had a 5-week exercise program. Times for an endurance swim; body weights; weights of hearts, kidneys, and adrenals; heart rates; and the amount of food consumed weekly were measured. The mean relative kidney weight (grams per gram of body weight) of the group trained from the beginning was larger than the rest; they consumed the least food and their body weight was less. The four groups that trained gained less weight than the exercised groups. All of the groups lost weight during the final training period except the group that trained continuously.

144. HIGGINS, Lynne. A Study of the Effects of Swimming on Physical Fitness of College Women. M.A. in Physical Education. 1963. 45 p. (M. Fox)
The Iowa Test of Motor Fitness and the Fox Power Swimming Test were given to 19 intermediate swimmers and 35 life saving students. Swimming improved endurance and leg and back flexibility significantly. The intermediate group showed significant improvement over the life-saving group in arm strength and endurance while the life-saving group showed significant improvement over the intermediate group in abdominal strength and endurance. Little relationship was found between overall endurance, arm strength, and leg power as measured in the physical fitness tests and the swimming tests.

145. HUNT, Virginia. The Relationship of Balance and Agility. M.A. in Physical Education. 1963. 25 p. (M. G. Scott)
Tests used were the balance stick for static balance; the sideward leap for dynamic balance; and the Scott obstacle race, 40-yd. maze run, and side step for agility. The correlations between agility and each type of balance were significantly greater than zero but too low for predictive purposes. The side step test appeared to have doubtful validity as an agility measure.

146. IMEL, Elizabeth Carmen. Construction of an Objective Motor Rhythm Skill Test. M.A. in Physical Education. 1963. 50 p. (M. Fox)
The motor rhythm test had a pattern of 12-in. squares arranged in a specific order on the floor. The subject was timed to see how quickly she could complete the pattern correctly. The results showed a high reliability coefficient, but the validity was low. Subjects were 77 women from the required program of physical education at the State University of Iowa.

147. JENSEN, Barbara E. Campers' Attitudes Toward Program Experiences Indigenous to the Natural Environment. M.A. in Physical Education. 1963. 245 p. (B. van der Smissen)
A multiple choice attitude scale was developed concerning six types of "real camping" experiences. The reliability as determined by the split-half method and the validity as determined from interviews was acceptable for the whole test with experienced campers aged 13 to 15 but the

coefficients for the parts of the scale and for the inexperienced and younger campers were not acceptable. The scale was used at the beginning and end of camp sessions with 125 campers in 11 camps in the Palisades Interstate Park, New York. The total group showed a mean regression in attitude from the beginning to the end of camp and in four of the camps this regression was significant at the .05 level. The relationship to 10 program and organizational factors was studied without statistical procedures. More regression seemed related to larger camp units, aptitude of counselors, higher rating on the DeMarche Rating Scale, and fewer "real camping" experiences.

148. KILLINGER, Delight A. A Study of the Effect of Intensifying the Emphasis on Physical Fitness in a Class of Educable Mentally Retarded Girls and a Normal Eighth Grade Class of Girls in Physical Education. M.A. in Physical Education. 1963. 62 p. (M. Fox)
The Iowa Test of Motor Fitness was administered before and after intensifying the emphasis on physical fitness of two groups of junior high school girls. No attempt was made to compare the two groups since one was an intact population while the other group was a sample of a larger population. The normal group improved significantly in leg strength and coordination, flexibility, and arm strength while the educable mentally retarded group showed significant improvement in flexibility, endurance, and speed.

149. KINGMINGHAE, Prabhantha. Static and Concentric Muscle Contraction: Effect on Blood Pressure and Pulse Rate. M.A. in Physical Education. 1963. 32 p. (A. J. Wendler)
Blood pressures were taken on 33 freshman and sophomore men in physical education classes at the University before, during, and after isometric and isotonic elbow flexion exercises performed with weights. Significant changes at the .05 level were found in both exercises for systolic blood pressure, which rose rapidly and persisted for 30 sec. after the cessation of exercise; for diastolic pressure, which rose rapidly with isometric exercise and persisted for 1 min. after cessation of exercise; and for diastolic pressure, which rose sharply during the first 30 sec. of isotonic exercise and then returned to the resting level.

150. LINDELL, Donald Dean. Maneuvers Used in National Collegiate Athletic Association Championship Wrestling Matches. M.A. in Physical Education. 1963. 75 p. (A. J. Wendler, D. H. McCuskey)
Moving pictures of the NCAA championship matches of 1952 through 1957 and of 1959 through 1962 were analyzed to determine which takedowns, escapes, reversals, and pinning combinations were employed most successfully, whether the weight class of the wrestler was related to the success of specific maneuvers, and trends in the use of specific maneuvers. Single-leg and double-leg takedowns were attempted the greatest number of times, but were among the least successful takedowns. The stand-up-turn and sit-out-turn-in were the most commonly attempted and among the most successful of the escape-reversal maneuvers. The Half-Nelson was the most attempted but least successful pinning maneuver. Weight class was apparently not related to success in specific maneuvers. From year to year, the number of takedown attempts has increased but the number of pinning attempts has decreased.

151. LOY, John W., Jr. Heart-Rate Changes and Energy Expenditures in Exercycle-Training. M.A. in Physical Education. 1963. 97 p. (G. M. Asprey)
The subjects were 11 overweight men 19 to 50 years of age who undertook a 10-week training program on the Exercycle. Heart rate and

energy cost measurements were taken at the beginning, when the subjects exercised 15 min. at slow speed, when the subjects exercised 15 min. at slow speed and 15 min. at fast speed, and at the end of the program. No general pattern of energy cost and progression with training was evident. The mean resting heart rate of the five subjects who completed 40 exercise sessions was lower after 5 min. of exercise and during recovery than it had been at the start of the program.

152. LUTZE, Margaret C. Achievement Tests in Beginning Lacrosse for Women. M.A. in Physical Education. 1963. 77 p. (M. Barnes)
The battery included a passing and catching test; a pick-up, pivot, and dodge test; and goal shooting test. The subjects were 70 high school students in a beginning lacrosse class. The results indicated significant reliability and validity coefficients for the passing and catching test but the pick-up, pivot, and dodge test and the goal shooting test needed revision.

153. McCLEMENTS, Lawrence E. Power Relative to Strength of Leg and Thigh Muscles. Ph.D. in Physical Education. 1963. 87 p. (A. J. Wendler)
The strength of the hip and knee flexors and extensors and "body power" (vertical jump times weight) was measured for 86 men in physical conditioning classes at the University. The groups were assigned randomly to developmental exercise programs for the hip and knee extensors, the hip and knee flexors, the hip and knee flexors and extensors, and general physical fitness. All within group gains on all tests were statistically significant at the .05 level. The mean gains of the "flexor-extensor" group was significantly greater than that of the other groups. The correlations between the initial flexion strength and power scores were .67 for the extensor group, .60 for the flexor-extensor group, .25 for the flexor group, .63 for the normal group, and .52 for the total group. The correlations between the initial extension strength and power scores were .66, .82, .52, .63, and .65 respectively.

154. McINTYRE, Martin H. A Comparison of Selected Skill Techniques in Bowling. Ph.D. in Physical Education. 1963. 160 p. (D. R. Casady)
Comparisons were made after 14, 19, 24, and 29 class periods of instruction and practice in bowling by 112 college men taught to use a combination of hook and straight ball deliveries with spot and pin aiming points. The mean gains for all subjects were significant between the first 7 lines and the first 10 lines, between the first 7 lines and the second 10 lines, and between the first 10 lines and the second 10 lines. Similar comparisons of gains showed that the straight ball delivery was significantly better than the hook ball delivery.

155. McKAIN, Harold L., Jr. Techniques of Executing Fundamental Skills of Football. Ph.D. in Physical Education. 1963. 253 p. (G. M. Asprey)
Analysis of 26 books and 228 articles published between 1956 and 1961 provided 3,331 statements concerning the execution of various fundamental skills in football and, of these, 348 pairs or groups of statements were in disagreement.

156. MICHALSKI, Rosalie Ann. Construction of an Objective Skill Test for the Underhand Volleyball Serve. M.A. in Physical Education. 1963. 35 p. (M. G. Scott)
The Dekan Performance Analyzer was used to measure the ball velocity for underhand serves by 82 high school girls and their accuracy was also

measured. Judge's ratings were used as a criterion. The velocity test was reliable but valid. The accuracy test was low in both reliability and validity but had a higher validity than the velocity test. The correlation between velocity and accuracy was higher than the validity of either test.

157. OLMSTEAD, Lloyd V. High-School Training-Rules for Athletics. M. A. in Physical Education. 1963. 60 p. (A. J. Wendler)
Questionnaire returns from 82 coaches and athletic directors in Iowa high schools showed that the following numbers reported training rules concerning: smoking, drinking alcoholic beverages, and hours of rest 80; morals 79; proper dress 69; health habits 68; restricting activity the day before a game 62; eating habits 57; number of dates 38; participating in other activities during the season 35; and driving cars 26. A list of recommended training rules was presented.

158. PIPHO, Armin Paul. Shot Position and Rebound Location for Missed Field Goals and for Missed Free Throws. M. A. in Physical Education. 1963. 46 p. (L. E. Alley)
To determine the relationship between the position on the floor from which a shot is attempted and the area to which the shot rebounds, rebounds of 3, 600 field-goal attempts from 18 different areas on the court and 200 rebounds of free-throw attempts were charted under practice conditions and the rebounds of all field-goal (1, 123) and all free-throw (377) attempts in 23 high-school basketball games were charted. The findings can be used to position good rebounders better and to devise offensive patterns providing better recovery of missed shots.

159. RANDALL, Nellie G. An Electromyographic Study of Selected Muscles Involved in Two Methods of Chinning. Ph. D. in Physical Education. 1963. 70 p. (M. Fox)
Integrated action potentials from the biceps brachii, brachialis, brachioradialis, and pronator teres were recorded on an Offner Type R Dynograph from 19 young adult women chinning from a standing position with the hands supinated and pronated. The action potentials were divided into four areas corresponding to parts of the movement indicated by an electrical goniometer. The four areas for each muscle were measured with a compensating polar planimeter. The t test was used to test for the significance of mean differences between hand positions at the . 05 level of confidence. The brachioradialis and brachialis were equally effective with the hands pronated and supinated but the pronator teres and biceps brachii acted significantly more favorably in the supinated position.

160. RAO, V. S. Sethu Madhava. Some Effects of Voluntary Hyperventilation as an Exercise. Ph. D. in Physical Education. 1963. 63 p. (G. M. Asprey)
The subjects were 30 male Caucasion inmates of the Iowa State Reformatory at Anamosa. Their mean age was 22 years. The basic data also included body weight, abdominal strength, vital capacity, physical efficiency (as measured by Harvard Step Test), breath-holding time, starting and running times for 100- and 400-m. runs, and oxygen consumption for a standardized work load. One group engaged in a program of voluntary hyperventilation and another group engaged in a program of bicycle riding for 16 weeks. A third group served as a control group. The subjects who engaged in voluntary hyperventilation and the subjects who engaged in bicycle riding increased their breath-holding time significantly at the . 05 level. The subjects who engaged in voluntary hyperventilation improved their physical efficiency and performance in the 400-m. run significantly more than subjects that engaged in a bicycle-riding program.

161. RAPP, Kenneth E. Running-Velocity: Body-Rise and Stride-Length.

M.A. in Physical Education. 1963. 35 p. (L. E. Alley, G. T. Bresnahan)
The subjects were 18 members of the State University of Iowa cross country, varsity track, and freshman track teams of 1961-62. Measurements of velocity, stride-length, and body-rise were taken from a two-stride segment of each of nine trial runs—three trials each at a 2-mile pace, an 880-yd. pace, and sprint. Changes in the velocity of runners resulted inversely in differences in body rise which were significant at the .001 level and in differences in stride length between the 2-mile and 880-yd. paces and between the 2-mile and sprint paces which were significant at the .01 level.

162. REED, Kenneth L. Speed-of-Movement Tests as Measures of Wrestling Ability (High-School Wrestlers). M.A. in Physical Education. 1963. 39 p. (A. J. Wendler)
Speed-of-movement tests based on wrestling skills were administered to 24 members of a high-school wrestling squad at the beginning and end of the wrestling season. The difference between initial and final scores on the tests was significant (P = .05). There was no significant relationship between speed-of-movement scores and the success experienced by the wrestlers in wrestling matches.

163. RENNER, Jon. Strength and Mass of Arm Relative to Speed of Arm-Movement. M.A. in Physical Education. 1963. 29 p. (A. J. Wendler)
Measurements of arm strength, arm weight, arm speed with a weight held in the hand, and arm speed without added weight were taken on 25 boys from the University High School in Iowa City. The correlation between arm strength and arm weight was .85, between arm strength and arm speed with added weight was. 78, and between arm weight and arm speed with added weight was .85.

164. SCAHILL, Jeannette L. Effects of Secondary School Health Instruction on the Health Knowledge of College Freshmen. Ph.D. in Physical Education. 1963. 86 p. (M. G. Scott)
A reliable and valid inventory of health knowledge and concepts with 85 multiple choice items was constructed covering heredity and reproduction; narcotics and stimulants; medical information; mental health; nutrition and diet; disease prevention and control; exercise, fatigue, and rest; safety; and biological background. College freshmen women (N = 162) at Central Washington State College who had health instruction in secondary school scored significantly higher than college freshmen women (N = 193) at the State University of Iowa who had not had health instruction in the Iowa secondary schools.

165. SCARBOROUGH, Roberta J. The Development of a Skill Test for the Tennis Serve for Intermediate Women Players. M.A. in Physical Education. 1963. 49 p. (M. Barnes)
Tests were developed for accuracy of placement and line of flight of tennis serves by intermediate women players. Scores on the serve tests were compared with scores on a softball throw for distance and the Modified Dyer Wallboard Test. The results indicated that neither serve test was an adequate measure of tennis serving ability. There was a low negative relationship between the softball throw for distance and both of the serve tests although the relationship was significant only with the test measuring accuracy of placement. A low positive but insignificant correlation was found between the Modified Dyer Wallboard Test and each serve test.

166. SCHURR, Evelyn S. The Accuracy of Children's Judgments of the

Playing Abilities of Their Peers in Grades One Through Six. Ph.D. in Physical Education. 1963. 147 p. (D. R. Mohr)
The judgments of the 289 children in grades 1 through 6 regarding the playing ability of their peers were found to be reliable at all grade levels. The judgments of throwing and jumping were significantly accurate as early as grade 2, while judgments of running were not significant until grade 3. Composite T scores, derived from the skill test scores, correlated with choices of teammates, showed that the children at all grade levels made significantly accurate judgments in relation to the objective skill measures. No significant relationships were found between choices of friends and choices of teammates, suggesting that the children displayed discrimination in basing their selections on the criteria given to them in the sociometric questionnaires.

167. SELL, Veryl L. Use of Fifteen-Inch Goal in Development of Shooting Accuracy in Basketball (High School). M.A. in Physical Education. 1963. 32 p. (L. E. Alley)
Twenty-two high school basketball players were divided at random into two groups. Throughout one basketball season, one group practiced shooting at baskets 15 in. in diameter; the other group practiced shooting at official 18-in. baskets. A shooting test that consisted of 450 shots from nine stations on the floor was administered to both groups at the beginning and the end of the season. Throughout the season, a record of the shots attempted and the shots made in games was kept for each player. On the final shooting test, the total scores from three of the nine stations were significantly higher at the .05 level for the small-basket group. In 16 interscholastic games, the small basket group made 36.4 percent of the field goals attempted; the official basket group made 32.3 percent.

168. SKINNER, Patricia Ann. A Comparison of the Attitudes of Women Physical Education Teachers in the Secondary Schools of Iowa Toward School Public Relations and their Work. M.A. in Physical Education. 53 p. (M. Fox)
Scales were constructed by the Likert method. Item discrimination was analyzed and the reliability was computed before sending them to 195 teachers with an 85 percent return. The reliability of the Public Relations Attitude Inventory was .93 and that of the Work Attitude Inventory was .84. The scores on the PRAI ranged from 43 to 82 out of a possible 90; the mean was 66.14 and the standard deviation was 7.37. The scores on the WAI ranged from 41 to 67 out of a possible 90; the mean was 54.23 and the standard deviation was 6.34. The correlation between the two inventories was .48 and attitudes toward public relations and work appeared favorable on the average.

169. STEPHAN, Sheryl Jo. A Program of Outdoor Education for the Elementary School, Grades One through Six. M.A. in Recreation. 1963. 187 p. (B. van der Smissen)
A content outline was developed from materials in education, psychology, sociology, and camping related to general education and outdoor education, program structure and content, and the learning process. The content chart for each grade was based on developmental tasks with exemplary experiences selected on the basis of 10 criteria concerning learning principles, curriculum design, and outdoor education objectives. The content outline and accompanying guide book were evaluated by a panel of experts and subsequently revised.

170. WAGNER, Ann Louise. The Concept of Physical Education in Selected Liberal Arts Colleges. M.A. in Physical Education. 1963. 49 p. (M. G. Scott)

As part of a series of studies concerning the image of physical education held by various groups, a 35-statement opinionnaire requiring agreement or disagreement was mailed to 102 academic deans in liberal arts colleges in 10 midwestern states and 78 percent responded. This group understood what physical education can contribute, believed in its worth, and showed no indication that they would like to see it eliminated. Their opinion concerning physical educators was less favorable, indicating that both teachers and programs should be improved but appearing receptive to interpretation of programs by the physical educators.

171. WINTER, Anne J. *Layouts for Folders on Fitness for Selected Populations*. M. A. in Physical Education. 1963. 110 p. (M. G. Scott)
The purpose was to develop layouts for a series of folders on fitness to stimulate interest and action in support of the national fitness movement. Layouts were prepared for college administrators, school board members, and youth agency leaders. Representatives of the three groups evaluated the folders and suggested revisions. Final copy was ready for refinement of art work and publication.

172. WOODALL, M. Thomas. *Breath-Holding During Activity and Rest: Effect Upon Various Circulorespiratory Measures*. Ph. D. in Physical Education. 1963. 92 p. (A. J. Wendler)
The subjects were 43 college men in physical education classes at the University. The basic data consisted of maximum breathing and breath-holding capacities; work output and oxygen consumption during 1-min. and 2-min. rides; and heart rate, blood pressure, hematocrit, and hemoglobin measurements connected with the ride. The groups that practiced breath-holding either during activity or rest showed gains statistically significant at the .01 level for maximum breath-holding, and for work output and oxygen consumption during the 1-min. ride.

**Long Beach State College, Long Beach 4, California**
(H. B. deVries)

173. McCALL, Maurice Gordon. *The Ipsilateral and Contralateral Effects of Isotonic Versus Isometric Unilateral Training*. M. A. in Physical Education. 1963. 40 p. (H. A. deVries)
Forty-five senior high school males were equated in control, isotonic, and isometric exercise groups on the basis of right and left elbow flexion strength tested with a cable tensiometer. The isotonic group used progressive resistance exercises and the isometric group used a 6-sec. static contraction with the dominant arm 3 days a week for 8 weeks. Isotonic training was superior in developing ipsilateral strength (13.60 to 7.87 lb. mean gain). Isometric training was superior in developing contralateral strength (7.40 to 6.40 lb. mean gain). All gains within the exercise groups were significant at the .01 level but the differences in mean gains were not statistically significant. Both groups improved insignificantly more than the control group in ipsilateral and contralateral strength at the .01 level.

174. OVER, Mary Ellen. *A Comparison of the Force and Resistance of the Frog Kick and Whip Kick Used in Swimming the Orthodox Breast Stroke*. M. A. in Physical Education. 1963. 73 p. (H. A. deVries)
A machine was built to tow a swimmer at a controlled velocity and record his propulsive force and/or resistance. On the average, a swimmer allowed to move at 2.36 ft./sec. was able to exert 2.44 lb. more force with the frog kick than with the whip kick. The mean difference was significant (.001). When the swimmer was towed toward the machine at 3.65 ft./sec.,

the recovery of the frog kick created 5.05 lb. more resistance and the thrust of the frog kick reduced the resistance .17 lb. more than the whip kick. These mean differences were significant (.01 and .02 respectively). The mean differences in time were not significant but the mean number of frog kicks was significantly less. The frog kick was the more efficient at slow and moderate speeds.

## Louisiana State University, Baton Rouge, Louisiana

(J. W. Kistler)

175. ALOST, Robert Allen. A Study of the Effect of Initial Cardiovascular Condition, Type of Training Program, and Frequency of Practice Periods Upon Cardiovascular Development of College Men. Ed.D. in Physical Education. 1963. 110 p. (F. Drury)

The score obtained on an initial Harvard Step Test represented initial cardiovascular condition. The type of conditioning program was either 60 sec. of isometric exercises of a 1-min. run taken either 2, 3, or 5 days per week. Subjects were 240 male physical education students. The 12 training groups used different combinations of the three variables. A three-factor analysis of variance was used. No significant difference was found between the type of exercises for the Harvard Step Test scores. Those in below-average condition tended to gain more than those in above-average cardiovascular condition, but, during the study, the below-average group did not obtain the condition of the above-average group. Five days of exercise proved to be significantly better than 2 or 3 days per week in developing better cardiovascular condition.

176. MICHAEL, Charles E. The Effects of Isometric Contraction Exercises on Reaction and Speed of Movement Times. Ed.D. in Physical Education. 1963. 61 p. (J. Nelson)

The movements tested were a lateral abduction of the arm and knee extension in a sitting position. Four groups of 34 college male students served as subjects. The control group had no systematic physical activity; another group had an isometric exercise program for the arm and leg movements; a third group took basic softball instruction; and the fourth group had the softball instruction along with isometric exercises. All subjects were tested at the beginning and end of the 6-week training period, utilizing a Hewlett-Packard Electronic Counter. Analysis of covariance showed significant gains in both arm and leg reaction times and movement times for the two groups that used isometric exercises. Participation in softball caused no significant changes in reaction and movement times. Isometric exercises significantly improved reaction times and speed of movement times of the arm and leg.

## University of Michigan, Ann Arbor, Michigan

(J. A. Faulkner)

177. ARBRIGHT, Diane R. The Relationship of Selected Measures of Wrist Strength to Bowling Skill in College Women at the University of Michigan. M.A. in Physical Education. 1963. 43 p. (K. Ley)

178. BUDDE, Elaine H. The Effect of the United States Golf Association Amateur Ruling on Women Physical Education Instructors. M.A. in Physical Education. 1963. 101 p. (S. Howard)

179. ELLIS, John. The Application of Taxonomy of Educational Objectives to the Determination of Objectives for Health Teaching. Ph.D. in Public Health. 1963. (M. E. Rugen)

180. FLATH, Arnold W. A History of Relations Between the National Collegiate Athletic Association and the Amateur Athletic Union of the United States, 1905-1963. Ph.D. in Physical Education. 1963. 325 p. (E. F. Zeigler)

181. FONGER, Sandra J. The Development of a Reliable, Objective, and Practical Tennis Serve Test for College Women. M.A. in Physical Education. 1963. 56 p. (E. French)

182. KIRK, John J. An Analysis of State Laws Affecting the Operation of Children's Summer Camps in the United States with a Suggested Universal Legislative Program. Ph.D. in Physical Education. 1963. 291 p. (E. F. Zeigler)

183. LARGE, Margaret. Factors Influencing Health Education Programs in Three Michigan Colleges from 1850 to 1956. Ph.D. in Public Health. 1963. (M. E. Rugen)

184. McDAVID, Robert F. The Effects of Intermittent Work on Selected Physical Fitness Tests. Ph.D. in Physical Education. 1963. 88 p. (P. Hunsicker)

185. WASER, Lois E. A Reliable, Objective, and Valid Method of Evaluating Static Anteroposterior Alignment of College Women. M.A. in Physical Education. 1963. 66 p. (K. Ley)

186. WELL, Elizabeth H. A Choreography: The Exiled. M.A. in Physical Education. 1963. 60 p. (E. E. Pease)

**Montana State University, Missoula, Montana** (W. E. Sinning)

187. ANDERSON, Floyd R. A Study to Develop a Montana University Motor Fitness Battery and Test Norms. M.A. in Physical Education. 1963. 39 p. (W. Sinning)

Existing tests of motor fitness were examined for specific test items which were considered to be valid tests of motor fitness and usable in a local testing program. From 34 test items, 10 were selected to comprise a final battery which was administered to 274 male freshmen in University service classes. Raw scores in the 60-yd. dash ($X_1$), push-ups ($X_2$), chins ($X_3$), dips ($X_4$), vertical jump ($X_5$), McCloy's Total Strength ($X_6$), 300-yd. run, flexed knee sit-ups, standing broad jump, and 300-yd. fall-off index were converted to T-scores and added to form a criterion for use with the Wherry-Doolittle test selection method. A multiple correlation of .98 was obtained between the criterion and a battery of six items. The regression equation was $9.311X_1 + .702X_2 + 5.96X_3 + 4.58X_4 + 10.235X_5 + 1.202X_6 - 215$. The standard error of estimate was 20.119.

188. BALLINGER, Robert D. A Study of Basketball Field Goal Shooting Deviations For Selected Male College Students at Montana State University. 1961-1962. M.S. in Physical Education. 1962. 75 p. (W. C. Schwank)

189. COLLETTE, Louis H. A Study of the Effects of an Isometric Training Program on Muscular Endurance and on Muscular Explosive Power. M.S. in Physical Education. 1962. 59 p. (C. F. Hertler)

190. ERUSHA, Angeline. The Development of Criteria for Evaluating

Family Campsites. M. S. in Physical Education. 1963. 100 p. (W. Sinning)

Eight principles for developing family campsites were derived from the literature. An opinionnaire was developed for rating general factors imperative, moderately important, or unnecessary and for rating specific factors optimum, satisfactory, minimum, or unnecessary. These were rated by 12 experts in recreation and the ratings were checked with chi square. Consensus occurred in campsite location and equipment, campground equipment, sanitation and water supply, traffic control, and fire protection.

191. JOHNS, Deloris Mae. A Study of the Physical Fitness of a Selected Group of Montana State University Women as Influenced by Hours Spent in Physical Activity. M. S. in Physical Education. 1963. 91 p. (A. L. Stoodley)

192. NUSBAUM, Galen. A Study to Investigate the Energy Expenditure of Subjects While They Were Operating Mechanical Trenchers of Different Design. M.S. in Physical Education. 1963. 45 p. (W. Sinning)

193. SMITH, Ronald George. A Study of the Relationship Between Leg Strength and Swimming Speed Using the Flutter Kick in the Prone Position. M.S. in Physical Education. 1962. 74 p. (C. F. Hertler)

194. THIELE, Barton A. A Study to Investigate the Strength Decrement of Selected Muscle Groups During Treadmill Walking at Different Grade Levels While Back-Packing a Prescribed Load. M.S. in Physical Education. 1963. 40 p. (W. Sinning)

Ten subjects each walked for 30 min. at 3 mph at three grades while back-packing a 62-lb. load. The strength decrements of muscle groups causing the humerus to move forward in a sagittal plane, trunk flexion, trunk extension, hip flexion, hip extension, knee flexion, and knee extension were determined from strength measurements taken with a cable tensiometer before and after the walks. Results were analyzed with the Wilcoxon t test and the Friedman two-way analysis of variance. Significant strength decrements were shown from all walks for all muscle groups. No apparent relationship existed between the size of the grade and the amount of decrement since only the knee extension group and the shoulder movers showed a significantly greater decrement at the 5 percent and 10 percent grades than at 0 percent and no significantly greater decrement was shown for any muscle group when comparing the 10 percent grade results with the 5 percent grade. Differences between grades were not significant when the strength decrements were summed.

**New York University, New York 3, New York** (R. A. Weiss)

195. CALHOUN, Miriam E. Principles for the Establishment and Conduct of Programs of Dance for Senior High School Girls. Ed.D. 1963. (G. Andrews)

Study of the physical, mental, social, and emotional characteristics of senior high school girls, the possible contributions of dance to developing these characteristics, and factors influencing high school dance programs resulted in eight findings from which 24 principles were formulated.

196. CASE, Maurice. A Manual for the Operation of Specialized Recreation Centers for Blind Adults. Ed.D. 1963. (M. A. Gabrielsen)

Psychology, recreation, and specialized literature was reviewed in relation to the effects of blindness on human and recreation needs. The current status of six major specialized recreation centers for blind adults was determined by an interview schedule validated by experts and found reliable by testing. A comprehensive manual was prepared on the basis of principles validated by a jury of experts.

197. NORRISH, Jean V. A Study of Health Qualifications for Elementary and Secondary School Teachers with Physical Handicaps. Ph.D. 1963. (H. F. Kilander)

A competency rating scale was developed. Principals and supervisors rated 75 teachers with medically diagnosed musculoskeletal, visual, auditory, extubercular, cardiovascular, and miscellaneous or multiple handicaps and 27 non-handicapped teachers of similar age, sex, experience, and grade level. Emotional disorders were excluded. Paired ratings showed close correspondence by rank correlation. Chi square indicated that the proficiency of the handicapped was significantly higher. Performance was not affected by the nature of the handicap according to analysis of variance. Sex, age, and experience indicated no relationship but grade level showed a possible relationship with performance. Selection of teachers with minimal handicaps was tentatively recommended.

198. RIDINGER, William H. Principles and Policies for the Organization and Administration of School-Community Recreation. Ed.D. 1963. (M. Gabrielsen)

A questionnaire survey of 18 New York State school districts helped to identify 25 characteristics of school recreation and 20 major problem areas were identified in relation to the characteristics with a check-list. Problems were traced to the characteristics and guiding principles were developed from the basic truths that have emerged from the recreation field. From these principles, 65 operating policies were formulated. The major causes of the problems were the general lack of philosophy, objectives, principles, and policies for recreation, and the insufficient status of recreation administrators.

199. WESTERBURG, Helen A. Foundations for a Manual for Teaching Health in the YMCA in the United States. Ed.D. 1963. (M. R. Fields)

Illustrations from the literature and 10 years of class projects indicated that effective health education can occur in an informal setting. Principles for teaching health consistent with Association philosophy were evolved and validated by documentation and jury approval. The manual began with reasons for teaching health in the YMCA and a philosophy for building programs. The content areas were based on current needs, contained specific program suggestions, and provided a bibliography of selected pamphlets and films. One area is programmed for several different groups and several areas are programmed for one group. The manual received a high rating and favorable comment from four authorities.

**North Carolina College, Durham, North Carolina** (R. E. Townes)

200. BONNER, Donald A. A Comparative Study of the Ability of High School Basketball Players to Perform Basic Skills at Three Stages of the Season. 1963. (R. E. Townes)

The Lehsten Test of Basketball Skills was administered to 77 male basketball players of the Negro High Schools in Richmond County, North Carolina, before, during, and after the regular season. It was found that 64 of the 77 players demonstrated their best skill during the regular season.

The greatest range of scores occurred on the test items involving speed, reaction time, and motor ability. The highest mean T-Scores were in fall handling, sensory-motor coordination, motor ability, and manual dexterity.

201. BURNS, Mae Clark. The Physical Fitness Status of Junior High School Girls. M.S. in Physical Education. 1963. (R. E. Townes)
The North Carolina Physical Fitness Tests were administered to junior high school girls in the Charlotte-Mecklenburg County Schools twice during the 1962-1963 school session by staff members of the physical education departments. Improvements occurred in all areas tested. The group showed the least progress in arm and shoulder girdle strength. The findings indicated that more activities designed to develop arm and shoulder girdle strength should be given.

202. GREEN, George H. The Defensive and Offensive Tactics of North Carolina High School Basketball Coaches. M.S. in Physical Education. 1963. (R. E. Townes)
The male coaches used in this study were selected from the four classifications of high schools in North Carolina. An instrument was constructed from recent relevant literature and was submitted to a panel of jurors for validation. The coaches and jurors agreed on a number of defensive and offensive tactics. The offenses used by the coaches in all four classifications ranked in order: fast break, 3 - 2, 2 - 1 - 2, and 2 - 3. The zone defenses ranked 2-1-2, 1-3-1, 1-2-2, and 2-3. The man-to-man defenses ranked: full court press, half court tight, loose man-to-man, and half court press.

203. LEE, Jeanette Allen. The Effect of Three Types of Physical Education Programs on the Development of Motor Ability. M.S. in Physical Education. 1963. (R. E. Townes)
Three types of programs were administered to 75 women students at St. Paul's College, Lawrenceville, Virginia. The Scott Motor Ability Test was administered to these subjects at the beginning of the fall semester of 1962-1963 to determine the initial status of motor ability. The subjects were matched and placed into a formal, informal, and formal-informal groups. After an experimental period of 33 45-min. class periods, the groups were retested. Although improvement occurred in all groups, the formal-informal group showed statistically significant improvement at the .05 level of confidence.

204. RICHARDSON, Nancy L. Attitude Toward the Co-educational Program As a Physical Education Requirement in the Secondary School. M.S. in Physical Education. 1963. (R. E. Townes)
The Wear Attitude Inventory and the Kappes Attitude Inventory were used to secure data. The boys as a group were less variable in their attitudes after exposure to the planned program. The girls as a group showed little if any change in attitude. The girls and boys were higher in agreement concerning "activities in which they desired instruction" than either "enjoyment of activity" or "estimation of skill in the activity."

## University of North Carolina at Greensboro, Greensboro, North Carolina

(R. McGee)

205. BAILEY, Laura Lilian. The Effect of Foot Exercise Upon Foot Function and Balance. M.S. in Physical Education. 1963. 83 p. (C. Ulrich)
A sample of 32 freshman women participated in a study to determine the effect of foot exercise upon the measures of foot strength, footprint

angulation, ankle flexibility, and body balance. The experimental group performed a battery of foot exercises; the control group had no exercises. The experimental group improved significantly in balance, ankle flexibility, and footprint angulation. The control group improved significantly in eversion strength and static balance. The stick balance test was the only item in which the experimental group exhibited significantly greater improvement.

206. HOYLE, Mary Ann. The Use of Labanotation for Synchronized Swimming. M. S. in Physical Education. 1963. 84 p. (R. McGee)
The Labanotation system of recording movement was used for a synchronized swimming routine. Labanotation was selected because it was the most universal notation system and because it fulfilled the requirements for synchronized swimming. Level, direction, spacial patterns, and quality of movement could be recorded as well as the creative element of the movement and the tempo. The United States Government has accepted Labanotation as the official recording system for copyrighted dances. Labanotation was recommended for synchronized swimming.

207. LUNT, Joanne Margaret. Vital Spark in Time. M. F. A. 1963. 38 p. (V. Moomaw)
A dance was choreographed on the basis of constant, present, future, and infinite time. Constant Time, conceived as the pulse of life continuing through the human body nature, was represented by pendular movements changing slightly in dynamics and intensifying as dancers joined the group. Present Time, conceived as the wonder, determination, and exploration of current events, was represented by the group twisting, turning, and stretching upward and outward toward a revolutionary idea with unified force giving a feeling of power. Future Time, conceived as an innate desire spurring man onward to improve conditions, was represented as a tremendous force exploding sharply and suddenly in all directions with bold, sincere, and buoyant movements. Infinite Time, conceived as beyond the recorded past or foreseeable future, was represented with each aspect of Time characterized for varying periods and then forming the symbol for infinity with the aid of an elastic rope while the pulsating movements merged into the unvarying beat of Constant Time.

208. McIVER, Nancy Howard. A Plan for a State Girls' Athletic and Recreation Association for South Carolina. M. Ed. 1963. 160 p. (M. Greene)
A plan was developed for organizing and administering a State Girls' Athletic and Recreation Association in South Carolina. The plan was evolved with information gained from questionnaires, theses, constitutions, handbooks, and interviews. A jury of professional people in South Carolina evaluated the plan to assess its appropriateness. The specifications for organizing and administering such an association were given in detail.

209. MESENBRINK, Robberta. The Relationship of Overhand Throwing Ability to General Motor Ability in College Freshman Women. M. S. in Physical Education. 1963. (G. Hennis)
An original test of throwing ability requiring less time, facilities, and equipment was developed to the point of acceptable reliability. The Humiston Motor Ability Test and the Scott Motor Ability Battery II were used as criteria of motor ability. Previously validated wall pass and softball and baseball throw for distance tests were also administered. Definite and positive relationships between motor ability and throwing ability were found, although the Humiston and Scott tests measured different aspects of motor ability (as previously asserted by Phillips). The

original test of throwing ability combined with the basketball throw for distance gave the best estimate of the Scott Motor Ability score.

210. MILLER, Earlynn Joy. Kinetiscope. M.F.A. 1963. 31 p. (V. Moomaw)
Absolute dance is devoid of verbal meaning and is concerned with sensing the structure of vital movement through kinesthesis. Kinetiscope, an absolute dance in four parts, isolated awareness of movement and virtualized pure movement into dance form for the shared art experience of the choreographer, dancer, and viewer. Absolute dance demands a feeling of inevitability and completeness from beginning to end. This is essential to communication and comes through discipline resulting from kinesthetic awareness. The greater the discipline, the more perfect the communication. Absolute dance is a personal phenomenon and must be discovered afresh by each individual choreographer, dancer, and viewer.

211. NATION, Edna Earle. The Effect of Physical Education Instruction upon Movement Concept. M.Ed. 1963. 54 p. (C. Ulrich)
The 55 subjects were freshman and sophomore college women enrolled in body mechanics, swimming, and fencing classes. Correlations were based on Q-sorts by subjects of Movement Concept Statements by Doudlah based, first, on "How you see yourself at this exact moment in time" and then on "How you would ideally like to be." Subjects taking fencing were more like their ideal self in movement than those taking swimming. The swimming and fencing classes showed a statistically significant difference in movement concept following five weeks of instruction and also a closer ideal-self to real-self relationship. The swimming class made the greatest change in movement concept after instruction.

212. OVERLY, Patricia Ann. A Practical Test for Senior Life Saving. M.Ed. 1963. 66 p. (R. McGee)
A practical life saving test was developed that would be shorter than the American Red Cross test, eliminate the repetition of skills, and provide a grading system specifying the minimum amount of skill necessary for certification. The Revised Battery correlated .48 with the American Red Cross test. It was considered an acceptable test for the ARC Senior Life Saving course but further changes were suggested to improve the battery.

213. SISLEY, Becky Lynn. Kinesthesis in Relation to Skill Level in Basketball, Bowling, and Tennis. M.S. in Physical Education. 1963. 121 p. (G. Hennis)
Kinesthesis supposedly accounts in part for individual differences in motor ability, provides error sensing, and is a factor in learning movements. The basketball players, selected from the extramural team and the physical education majors tournament, were given the Leilich basketball test battery. The tennis players, selected from intermediate classes, had the highest scores on the Dyer Backboard Test. The bowlers selected were those having the best averages for the last 10 lines in bowling classes the previous semester. The 60 subjects were given a kinesthesis test battery developed by Roloff consisting of balance stick, weight shift, arm raising, and arm circling items. The relationship between kinesthesis and skill level in basketball, bowling, and tennis was negligible.

214. TRUMP, Chrystelle Lee. Whoopee. M.F.A. 1963. 46 p. (V. Moomaw)
Discursive symbolism is found in literature and non-discursive symbolism is found in painting, sculpture, music, and dance. A good dance cannot be explained wholly in words since the total meaning depends on non-verbal visual, auditory, and movement qualities although the thematic material may be verbalized in part. The present study explained the non-discursive

symbolism functioning in dance and clarified Langer's term, "presentational symbolism," as it functioned in the choreography of "Whoopee." Dance demands non-discursive presentational symbols to be an art form since without these dance would be scientific and explainable discursively.

215. TUFTS, Sharon Anne. The Effects of Mental Practice and Physical Practice on the Scores of Intermediate Bowlers. M.S. in Physical Education. 1963. 78 p. (G. Hennis)
The subjects bowled five lines in three nights during one week before and after the experimental period for their initial and final scores. During the 3-week experimental period, the physical practice group bowled one line per night three nights per week and the mental practice group met to rehearse bowling without overt movement three nights per week for an average duration of 17 minutes. Mental and physical practice were equally effective in maintaining bowling performance since no difference was found between the initial and final performances of the two groups.

216. WERTZ, Delores Jean. A Comparison of Physical Education in Germany and America From the Years 1860-1930. M.S. in Physical Education. 1963. 84 p. (R. McGee)
The Turnen of Jahn provided a solid foundation for nationally organized Liebeserziehung in Germany as it varied from an outside-of-school, to a school, and then to a military activity with sports and games eventually becoming popular. The cohesiveness of the German organization made it a prime target for political propaganda so Liebeserziehung began to serve the state and on the renewal of sports following World War I again became a tool for political propaganda since the Germans had not been educated to the inherent qualities of a democracy politically, socially, or athletically. The foundation in America developed from frontier individualism, eclecticism concerning foreign systems, and original sports such as baseball and basketball. Foreign gymnastics flourished for a time but yielded to the more social sports and games of interest to Americans. Huge organizations were not formed but large numbers of Americans became sports fans.

217. WEYERS, Joan Rita. The Construction of 8mm Loopfilms Which Illustrate Basketball Drills in Practice and in Game Situations with Adaptations to Include the Roving Player. M.Ed. 1963. 74 p. (E. Griffin)
A series of 8mm loopfilms was constructed to illustrate basic practice drills and related game applications in accordance with the 1962-63 DGWS rules. The loopfilms were designed to stress the importance of practice drills, indicate the similarity between drills and game play, aid skill development in neglected areas, facilitate learning, introduce new skills, and provide self-instruction for independent groups.

218. ZUMBEHL, Judith Mae. In the Midst of Them. M.F.A. 1963. 34 p. (V. Moomaw)
"In the Midst of Them" exemplified the idea that man understands the feelings of others only as he has experienced these feelings. The dance began with a single dancer moving in a self-confident and positive manner. As the other dancers entered, she established a different relationship with each. The first dancer's growing awareness of others' feelings and attitudes toward her developed into confusion and fear. The group's movement themes indicated their misunderstandings of the main dancer. This developed into intense anger and hate and found its release in the climatic attack upon the first dancer. As the dance came to an end, the first dancer recovered her positive attitude and self-confidence.

**Northern Illinois University, DeKalb, Illinois** (J. C. Mitchem)

219. DOSER, Nancy Lou. Effect of a Program of Neuro-Muscular Reconditioning on Functionally Pronated Feet. M.S. in Physical Education. 1963. 63 p. (E. C. Lane)
College women with functional foot pronation were divided into two groups of 30 each on the basis of footprints scored by the Ewing method. The experimental group received 25 lessons in neuromuscular reconditioning using visual imagery. Each lesson was 50-min. long and lessons were given twice weekly for 15 weeks. The control group continued their daily activity. The improvement in foot alignment of the experimental group was significantly improved over that of the control group beyond the .01 level.

220. GREBNER, Florence Darleen. A Comparative Study of the Effectiveness of Two Methods of Attaining a Full Draw of the Bow by the Beginning Archer. M.S. in Physical Education. 1963. 56 p. (M. M. Bell)
Subjects were 93 freshman and sophomore girls at Glenbard East High School, Lombard, Illinois. Within each class half learned to draw the bow by the pull method and half used the new push method. All groups were equal in intelligence, general motor ability, and beginning archery ability. Comparison by t of the mean scores on the final round showed no significant difference between methods within classes or for the total group. Correlations between the final score and either general motor ability or intelligence were both very low but the reliability computed on the last two rounds was .76. Students using the pull method tended to have more bruises on the inner arm because of hyperextension of the elbow but the difference between groups tested by chi square at the .05 level was not significant.

221. ORTMAN, Rosemary. Relationship Between Dance and Balance in Girls. M.S. in Physical Education. 1963. 52 p. (J. C. Mitchem)
Prepubescent, pubescent, and postpubescent girls (N = 147) were divided into groups with and without previous dance experience. Weight, age, sitting height, and standing height were measured and the subjects were given a balance beam test and the Iowa-Brace Motor Ability Test. Comparison of the balance beam results with t showed that the pubescent nondance group was significantly superior on the first trial and that the postpubescent dance group was significantly superior on the fifth trial. Chi square showed that the dance group tended to have progressively begter balance at the pubescent and postpubescent levels. The correlations between balance and the anthropometric measure were essentially zero.

222. SOGHIGIAN, Helen June. Routes of Recreational Significance in the Quetico-Superior Area. M.S. in Physical Education. 1963. 148 p. (M. M. Duncan)
Three trails of major importance to Indians, trappers, voyageurs, miners, lumbermen, and statesmen traversed the area known as Hunters Island. From review of the literature, interviews, and field trips, a detailed map pinpointing points of interest was prepared.

223. WIENKE, Phoebe A. Adaptations and Modifications of Selected Physical Education Activities for Blind Children Participating with the Sighted. M.S. in Physical Education. 1963. 63 p. (E. Lane)
Three totally blind junior high school girls were integrated in regular physical education classes. Adaptations and modifications were made in basketball, body mechanics, calisthenics, fitness tests, gymnastics, locomotor skills, softball, track and field, and trampoline. A Braille

diagram board and basketball scoreboard, a posture manikin, and an indoor starting block were devised as tactual teaching aids. Evaluation was primarily through observation and comparison of performance with sighted children of equal growth and development but the results indicated that with suitable adaptation, modification, and teaching aids, blind children could participate actively in physical education classes with sighted children.

**Ohio State University, Columbus 10, Ohio** (D. K. Mathews)

224. GAZETTE, Peggy Ç. Self-Perception and Peer-Perception of a Group of Women Majoring in Physical Education. Ph.D. in Physical Education. 1963. 129 p. (M. A. Mordy)
Subjects in physical education rated their own group both as they perceived themselves and as they perceived others viewed them. Non-physical education majors also rated the subjects. The self-perception scores were significantly higher than those of non-majors. However, when estimating the ratings of non-majors, the subjects' scores were significantly lower than actual ratings.

225. KAPLAN, Robert. Teaching Problem-Solving with Television to College Freshmen in Health Education. Ph.D. in Health Education. 1962. 206 p. (D. Oberteuffer)
Conventional teaching methods were compared with a problem-solving method employing television presentations and discussion sessions for both groups. The problem-solving group scored as well as the conventional group in factual information and significantly better in problem-solving ability according to analysis of covariance.

226. KIME, Robert E. An Investigation To Determine the Feasibility of Using Developmental Tasks as a Source of Health Interests of Junior High School Students. Ph.D. in Health Education. 1963. 112 p. (W. P. Cushman)
Health questions related to Developmental Tasks were compared with general health questions to determine which type elicited the most interest from students. These findings were also analyzed to determine if any variations in interest were caused by age, sex, I.Q., and socioeconomic background.

227. MORRISON, Jane Elizabeth. The Major Changes in the Philosophy Underlying Women's Sports and Their Influence on Basketball Rules. M.A. in Physical Education. 1963. 83 p. (M. M. Yost)
This thesis traced the changes in attitude of women physical educators toward competition and showed the philosophical influences on major changes in the Division of Girls and Women's Sport Basketball rules. While the style of play was altered considerably the basic principles of the original game remain unchanged.

228. NOLTE, Ann Elizabeth. An Historical Study of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association. Ph.D. in Health Education. 1963. 395 p. (D. Oberteuffer)
The purpose of this study was to survey the history of the Joint Committee on Health Problems in Education and to determine the many factors which influenced its formation and progress. In addition, the contributions of the Joint Committee to the field of school health education were determined.

229. SOLLEDER, Mirian Kinnaird. Factors Influencing the Use of the

University Health Service by Students at The Ohio State University. Ph.D. in Health Education. 1961. 171 p. (E. Sliepcevich)
Among those who visited the Health Service most frequently during 1959-1960 were dormitory, sorority, and fraternity residents; freshmen, women, and unmarried students. This study also revealed student needs and attitudes in selected health areas and made suggestions for the University Health Service to consider in improving its services.

**Ohio University, Athens, Ohio** (J. G. Mason)

230. CULLUM, Margaret J. An Evaluation of the Required Program in Physical Education for Women at the University of South Carolina. M.S. in Physical Education. 1963. 140 p. (W. K. Miller)
The questionnaire devised by Cordts and Shaw was completed by 144 sophomore women who had been in required physical education at least three semesters at the university and by the women's physical education faculty. In general, the program compared favorably with those in other state coeducational institutions and the students considered the program valuable. The primary criticisms by students were inadequate facilities, variety in course offerings, and number of instructors.

231. TUTTLE, Laura L. A Comparative Study of Ohio University Freshman Women Physical Education Majors and Non-Majors in Scholastic Aptitude, General Motor Ability, and Personality. M.S. in Physical Education. 1963. 55 p. (W. K. Miller)
The 23 freshman majors were compared with an equal group of freshman women selected randomly. The majors were significantly (by t at the .05 level) superior to the non-majors on the Humiston test of General Motor Ability for College Women but inferior in scholastic aptitude as measured by the Ohio State University Psychological Test. The California Test of Personality showed that the majors had a higher "feeling of belonging" but differences on the other 11 parts were not significant. None of the correlations between variables was significant and the differences in correlation between groups were not significant.

**University of Oregon, Eugene, Oregon** (M. S. Poley)

232. CLAYTON, Robert Donald. The Efficacy of the Land-Drill, Implicit-Rehearsal, and Water-Practice Methods in Teaching the Breast Stroke and the Crawl Stroke to College Men. Ed.D. in Physical Education. 1963. 165 p. (W. B. Brumbach)
The 56 college male subjects were divided into three groups equated in motor ability, motor fitness, swimming ability, and confidence in the water. During the three 40-min. practice sessions per week for 8 weeks, one group practiced entirely in the water but the other two groups spent 6 min. per session in land drills or in implicit rehearsal before receiving the same instruction in the water. The t test applied to three swimming achievement tests showed five of 12 differences significant beyond the .01 level with the implicit rehearsal group showing no superiority in any instance. The correlations between swimming achievement and motor fitness and motor ability were low. Analysis of covariance showed no significant differences between groups. The three methods of instruction appeared equally effective.

233. FALKENBERG, Eugene E. A Comparison of the Motor Fitness and the Physical Education Programs for Boys in Selected Alberta High Schools. M.S. in Physical Education. 1963. 85 p. (W. Brumbach)

234. GREEN, John Anderson. A Study of Misconceptions in Social Health Among Freshmen Men and Women at Appalachian State Teachers College. M.S. in Health Education. 1963. 57 p. (F. B. Haar)

235. HARRIS, Dorian E. The Effect of Selected Agility Activities on Badminton Playing Ability of Women at the University of Oregon. M.S. in Physical Education. 1963. 35 p. (M. Poley)

236. HUTCHINS, Gloria Lee. The Relationship of Selected Strength and Flexibility Variables to the Antero-Posterior Posture of College Women. Ed.D. in Physical Education. 1963. (M. S. Poley)

Profile photographs of 92 undergraduate women were taken as a basis for measuring angular deviation of the head and neck, trunk, and hips from a straight line. The deviations were summed for an overall assessment of body alignment. The strength of the upper thoracic extensors, trunk flexors and extensors, hip flexors and extensors, and pectoral and scapular adductors was measured and five flexibilities were measured. The positive and significant linear correlations between strengths of opposing muscle groups indicated that alignment depended on a balance in muscular strength. Standard score strength ratios for trunk extensor to flexor strength of 1.2:1 were associated with small angular deviation of the trunk. The relation of imbalance to deviation was generally higher with curvilinear correlations. Excess hip flexor strength was associated with pelvic tilt and other misalignments were generally related to muscular imbalances.

237. JONES, John G. Motor Learning Without Demonstration or Physical Rehearsal, Under Two Conditions of Mental Practice. M.S. in Physical Education. 1963. 68 p. (W. Brumbach)

238. KURIMOTO, Etsuo. Longitudinal Analysis of Maturity, Structural, Strength, and Motor Development of Boys Fifteen Through Eighteen Years of Age. Ph.D. in Physical Education. 1963. 336 p. (H. H. Clarke)

The same boys were measured annually from 15 through 18 years of age. Skeletal age and strength increased more than structural measures when mean growth gains were expressed in standard deviation units. Mean mesomorphy increased significantly from 4.05 to 4.65 and mean ectomorphy decreased significantly from 3.71 to 3.18. The standard deviations at a given age often appeared large, for example: 12-13 months for skeletal age, 20-26 lb. for weight, 37-45 cubic in. for lung capacity, and 273 to 322 lb. for leg lift strength. Interage correlations tended to be high: .90 to .96 for skeletal age, above .80 for structural measures and somatotype components, and slightly lower for strength and motor tests. The advanced maturity group at age 15 maintained their superiority in weight, lung capacity, and leg lift strength through age 17.

239. MAGRUDER, Mary Alice. An Analytical Study of the Testing for Kinesthesis. D.Ed. in Physical Education. 1963. 42 p. (M. Poley)

Five tests of kinesthesis were administered to 81 blindfolded boys in grades 9 and 10 divided into three groups after demonstration and preliminary practice as follows: no practice, one correct trial with vision, and one correct trial blindfolded. The mean for the group with one correct preliminary trial blindfolded was significantly better than that for the group with no practice in balance stick, pull, arm raising, and leg raising but not in weight shifting. The mean for this group was significantly better than that for the group with one correct preliminary trial with vision in pull and arm raising. The mean for the group with one correct preliminary trial with vision was significantly better than that for the group with no practice in pull, weight shifting, and leg raising.

240. MATTHEWS, Leslie E. A Battery of Basketball Skills Tests for High School Boys. M.S. in Physical Education. 1963. 79 p. (W. Brumbach)

241. ROGERS, Patricia Ann. The Effects of Specific Motivational Techniques Upon Performance of a Physical Fitness Test. M.S. in Physical Education. 1963. 31 p. (M. Poley)

242. SHELDEN, Miriam Feely. An Investigation of the Relative Effects of Mental Practice and Physical Practice in Improving the Efficiency of the Breast Stroke. M.S. in Physical Education. 1963. 39 p. (M. Poley)

243. TATTERSFIELD, Charles Roy. The Body Size, Strength, Muscular Endurance and Power of Top-Flight English Rugby and Soccer Players. M.S. in Physical Education. 1963. 135 p. (H. H. Clarke)
Subjects were 15 players from one top-flight team in England in each of the following games: amateur rugby, professional rugby, amateur soccer, and professional soccer. Team members were compared on the U.S. Navy Standard Physical Fitness Test, the Oregon simplifications of Rogers' Strength Index and Physical Fitness Index, and the individual test items. Mean superiorities by teams were: amateur rugby players in muscular endurance and gross strength, professional rugby players in weight and vertical jump, amateur soccer players in push-ups plus pull-ups and muscular endurance, and professional soccer players in back strength and sit-ups. The offensive amateur and professional rugby players were superior to the defensive players in Physical Fitness Index and some muscular endurance tests. The defensive soccer players were superior to the forwards in body weight and standing height, and the amateur defensive players were superior in Strength Index, leg strength, and leg power.

244. THOMPSON, Cameron, and VANDER WEY, Allen O. Study of Muscular and Circulatory Endurance Test Items for Primary School Boys and Girls. M.A. in Physical Education. 1963. 65 p. (H. H. Clarke)
Eleven tests of muscular and circulatory endurance were initially selected for use with children in grades 1, 2, and 3 but five proved inappropriate on a preliminary trial. The tests retained were wheelbarrow push-ups, squat jumps, flexed-arm hang, step-ups, and bench push-ups. These were administered twice, once by each investigator; again by each investigator; and then those with sufficiently high test-retest reliabilities were administered twice more. The flexed-arm hang was the only test with sufficiently high reliability and objectivity to justify consideration for physical testing at this grade level, although sit-ups and step-ups had coefficients high enough to warrant restudy.

245. WHITLOCK, Richard Eugene. Attitudes of College Students Toward Certain Aspects of a Large Group Televised Health Education Course at San Jose State College, San Jose, California. Ed.D. in Health Education. 1963. 309 p. University of Oregon. (F. B. Haar)
Attitudes were surveyed before and after conventional and televised health education courses. The attitude toward health instruction of both groups was slightly favorable. The attitude toward health instruction of the television group improved significantly at the .05 level but remained slightly

favorable. Their attitude toward televised instruction, initially negative, improved significantly at the .01 level during the semester to approximate indifference. Objects expressed were more toward television as an instructional device than toward required health education per se.

246. WILEY, Roger C. Single-Year and Longitudinal Comparisons of Maturity, Physique, Structural, Strength, and Motor Characteristics of Twelve-Year-Old Elementary Athletes and Nonparticipants. Ph.D. in Physical Education. . 1963. 328 p. (H. H. Clarke)
Changes in maturity, physique, structure, strength, and motor traits during the period from the 9th to the 12th year of age were examined in elementary school boys who were successful in interscholastic athletics. The best differentiators of athletic ability were, in order: standing broad jump, Roger's arm strength score, 60-yd. shuttle run, total-body reaction time, Strength Index, and Physical Fitness Index. The best differentiators for separate sports were: football—Strength Index, 60-yd. shuttle run, standing broad jump, body weight, and calf girth; baseball, basketball, and track—standing broad jump, 60-yd. shuttle run, and Physical Fitness Index. The three somatotype components, various structural measures, and pull-ups had little apparent value as differentiators of athletic ability at these ages.

247. WILLEE, Albert William. Comparison of English-Type and Victorian-Type Physical Education Lessons in the Development of Muscular Endurance and Flexibility in Nine to Ten Year Old Boys, Victoria, Australia. M.S. in Physical Education. 1962. 45 p. (H. H. Clarke)
Two groups of 28 boys aged nine and ten years were formed by matching their combined score on the psoas, upper back, and lower back items of the Kraus-Weber Test of Minimum Muscular Fitness. Seventeen physical education lessons were conducted by the investigator, consistently using either the program in the Victorian (Australia) or the British physical education syllabus. Both groups showed significant gains in the psoas, upper back, and lower back items; however, the differences between the mean gains of the two groups were not significant. Significant differences in mean gains were not obtained for the abdominal plus, abdominal minus, and flexibility tests.

248. WYNESS, Gerald B. A Study of the Effectiveness of Motion Pictures as an Aid in Teaching a Gross Motor Skill. Ed.D. in Physical Education. 1963. 56 p. (W. Brumbach)

**Pennsylvania State University, University Park, Pennsylvania**
(E. A. Gross)

249. CLEMENTS, Edward S. The Effect of Weight Training on Per Cent of Total Body Fat and the Total Body Weight. M.S. in Physical Education. 1963. 58 p. (J. D. Lawther)
Progressive weight training was performed by 73 college men once a day three days a week for 6 weeks; 36 continued an additional 8 weeks. Percent body fat was computed by the Keys and Brozek formula using skinfold measurements of the abdomen, chest, and upper arm. The fatter boys lost very little weight, although the amount of fat was reduced, but the thinner boys gained significantly in weight. Both groups lost fat in 14 weeks of training. Any anticipated weight gain from muscle development in the fatter boys rarely equalled their weight loss from fat decrease in 6 weeks of training but compensated for it in 14 weeks of training. The fat losses were not attributable solely to weight training, since groups not engaged in weight training also showed some loss.

250. NAPIER, Anthony E. The Contributions of Margaret Christina Brown to Teacher Education and Physical Education. M.S. in Physical Education. 1963. 131 p. (J. D. Lawther)
Dr. Brown devoted a lifetime of service to teacher education and to physical education. Her early life at St. Lambert, Province of Quebec, Canada, was reviewed. Her rise from an instructor at Newark Normal School to President of Panzer College was carefully presented. Her services to the profession, locally, nationally, and internationally were delineated. Her main contributions in teacher education were: organization and administration of Panzer College, individual teaching contributions, professional writings, and active participation in professional organizations.

251. ROHALY, Kathleen A. Relative Effectiveness of Three Different Methods in College Health Teaching: Lecture, Lecture-Recitation, and Recitation. M.S. in Physical Education. 1963. 104 p. (J. D. Lawther)
Lecture, lecture-recitation, and recitation methods of teaching health to equated groups of freshman and sophomore college women (N = 193) were used by the same instructor with classes meeting in three 75-min. periods a week for 5 weeks. The within groups gains in health knowledge were all significant but analysis of variance on the post-test scores showed no significant differences attributable to method.

252. SPARKS, Jack Leon. Relative Effects of Various Verbal Incentives on Learning and Retention of a Gross Motor Skill. M.S. in Physical Education. 1963. 91 p. (J. D. Lawther)
Verbal praise, criticism, combined praise and criticism, and no comment were used in teaching the overhand volleyball serve to 100 grade 7 and 8 boys who had 10 trials daily for 3 weeks. The effects were not significantly different during learning but combined praise and criticism resulted in better retention than praise alone, criticism alone, or no comment.

253. SWEETING, Roger L. Effects of Various Running and Weight Training Programs on Sprinting Speed. M.S. in Physical Education. 1963. 55 p. (J. D. Lawther)
Running, weight training, combined weight training, and no training were given to 100 college men for 8 weeks to determine the effect on sprinting speed for 30 yards. Analysis of variance showed that: a systematic running program increases sprinting speed significantly more than weight training or no training; with equal total training time, running alone was as effective as running plus weight training, and weight training alone was no better than no training.

254. WILLIAMS, Edward C. Relationship of Certain Body Proportions to Success in the Sport of Gymnastics. M.S. in Physical Education. 1963. 54 p. (J. D. Lawther)
Ten body measurements were taken on 79 college men and ratios were computed. The subjects were given an 8-week course in gymnastics and tumbling. Five of the body-measurement ratios showed significant correlation with gymnastics ability. An R of .64 was calculated between a combination of these five body-measurement ratios and gymnastics ability. Although the R did not produce a high enough correlation for selection of individual squad members, it might serve for group classification in gymnastics at the beginning stages.

**San Diego State College, San Diego 15, California** (P. Governali)

255. BARRITT, Warren Lyle. A Comparative Study of Physical Fitness in the San Diego City Schools. M.A. in Physical Education. 1963. 58 p. (W. Terry)

The California Physical Performance Test (sit-ups, pull-ups, standing broad jump, 50-yd. dash, and 12-in. softball throw for distance) was used to compare 1,800 senior boys who had completed 3 years of physical education with 125 senior boys who had completed 3 years of military science. The results reflected only their physical fitness when they were tested. The mean performances of the physical education students were significantly higher than those of the military science students.

256. BECK, Paul. A Study of the Scholarship Grades of Athletes at Mission Bay High School, San Diego, California. M.A. in Physical Education. 1963. 76 p. (G. Ziegenfuss)

The grade point averages of 249 athletes and 757 nonathletes who were graduated from Mission Bay High School between 1957 and 1961 were compared. The San Diego Unified School District passed a rule that a C average must be maintained for eligibility in 1959. The mean grade point average of athletes (2.59) was markedly higher than that of nonathletes (2.26) and the athletes were predominantly above 2.50. Tennis players had the highest averages, followed closely by cross-country and basketball. Athletes in individual sports had slightly higher averages than those in team sports. Averages during winning seasons were almost identical with averages during losing seasons. Athletes selected as most valuable had averages .06 higher than other athletes. The C-average eligibility requirement did not increase the grade point averages of athletes.

257. CUENCA, Frank. Interschool Athletic Programs in the Junior High Schools of the San Diego Unified School District 1922 to 1962. M.A. in Physical Education. 1963. 63 p. (W. Lauritsen)

The study reviewed the school-sponsored interscholastic programs and their discontinuation, return, and final discontinuation in 1960. School authorities decided to have strong intramural and physical education programs because an interschool athletic competition at the junior high school level was not a desirable program to be supported by tax funds.

258. DISNEY, Richard Ferris. A Comparative Study of Mentally Gifted and Average Intelligence High School Boys in Physical Education. M.A. in Physical Education. 1963. 88 p. (C. Benton)

Fifty mentally gifted male students were compared to an otherwise matched group of average intelligence in physical education grades, physical fitness test scores, sports skills test scores, and athletic team participation. The results were subject to F and t tests. Mentally gifted students scored higher than students of average intelligence on tests of strength, speed, agility, and hand-eye coordination. There was no significant difference between the groups in large muscle group coordination. The mentally gifted students participated in athletics and sports much more than the average group and received better physical education grades.

259. JOHNSTONE, John Alexander. A Comparative Study of the Cardiovascular Fitness of Smokers and Nonsmokers. M.A. in Health Education. 1963. 54 p. (W. Lauritsen)

Twenty-eight smokers and 28 nonsmokers of college age were tested in resting pulse rate and a modified Harvard Step Test. The nonsmokers averaged about six beats less per minute in resting pulse and three to four points higher on the step test score but the differences were not statistically significant, though more nearly significant for the step test mean difference. High step test scores correlated .558 with low resting pulse rates. A high and statistically significant correlation was found between the height/cube-root-of-weight ratio and the modified Harvard Step Test but not for resting pulse rate.

260. MAZZEI, Gene L. Athletic Award Systems of the California Collegiate Athletic Association. M.A. in Physical Education. 1963. 75 p. (A. Olsen)

Questionnaires were sent to the seven colleges. None of the colleges used identical standards. Six schools had well-organized, up-to-date printed policies but saw no need for uniform standards between colleges. Only two colleges differentiated between major and minor sports but all colleges required the recommendation of the coach as the initial qualification for an award.

261. NOON, Thomas Joseph, Jr. The Effects of Speed Training and Over-Distance Training on Young Runners. M.A. in Physical Education. 1963. 100 p. (F. Kasch)

All available distance runners at the local high school were assigned randomly to two groups that practiced for 12 weeks, either on speed or over-distance work. The 5,000 meter run was the primary criterion for increased endurance and recovery heart rates were measured as well as running times. The over-distance group improved significantly (.05 level) over the speed group in running times but took significantly longer for the heart rate to return to the level, apparently because they ran faster. Both groups improved their ability to recover from maximum to the level rate after workouts but the speed group took longer to recover from maximum to 120 beats per minute and the over-distance group remained the same. Otherwise, both speed and over-distance training had value when used appropriately.

262. STEVENS, Robert Lee. Health Problems of a Specific Group of Tenth-Grade Students at Morse High School, San Diego, California. M.A. in Health Education. 1963. 49 p. (W. Lauritsen)

Students listed their personal health problems, which were primarily disease (communicable and non-communicable), fatigue, embarrassments in school and social life, multiple worries, frustrations, and nutritional lacks. Causative factors were brought out in class discussion and categorized as: school (lack of time for lunch and passing between classes, overly heavy homework and activity schedule, and lack of vocational counseling); home (heavy duties, no quiet time for study, lack of prepared meals, heavy social restrictions, and lack of lunch money); and school-home (lack of clear communication between school and parents, and lack of school interest in suggesting effective social rules and regulations to parents for their children). Personnel in health, counseling, and the Student Council assisted in gaining better school-parent cooperation.

263. TOOZE, Gerald Eldridge. A Survey of Current Rating Practices Used by Basketball Officials in Selected Areas of the United States. M.A. in Physical Education. 1963. 93 p. (G. Ziegenfuss)

Questionnaire returns were obtained from 70 percent of the 96 associations. Standard rating procedures were prevalent. Coaches most often rated the officials, generally after each game, and could indirectly eliminate the most objectionable. The most frequent criteria were knowledge of rules, neatness, proper use of signals, and ability to control the game. The use of ratings varied, with classification of officials and assignment of games being the most common uses. Officials were generally notified of their ratings and about half of the associations notified the coaches and athletic directors of officials' ratings. Most associations were satisfied with their rating systems and a number were asked to rate schools, teams, coaches, and principals concerning sportsmanship and facilities.

264. WELLS, Richard Wayne. Materials and Practices Used in Construction of Southern California College Track and Field Facilities. M.A. in Physical Education. 1963. 82 p. (C. Sportsman)
Detailed information concerning materials and practices in constructing tracts and field event areas was collected by questionnaire from 34 of the 47 colleges (72 percent return). A 1952 survey showed a strong preference for cinder tracks but the present survey showed that 48.4 percent of the respondents preferred a crushed brick mixture for the running surfaces and all preferred all-weather surfaces for the field events.

265. YENSEN, William Arthur. An Investigation of Factors That Contributed to the Success of NCAA Wrestling Champions. M.A. in Physical Education. 1963. 130 p. (H. Broadbent)
Questionnaires were sent to 89 NCAA wrestling champions (1947 - 1962) with 61 (59 percent) responding. The average respondent began wrestling in grade 9 at 14 and won his NCAA title at 21. They began wrestling because of a desire for combative activity and recognition. As beginners, demonstrations by the coach and assistance from experienced teammates were most helpful but the personal qualities most frequently cited were balance, perseverance in training, and determination and desire. The most common feelings before a match were of confidence and determination. The average respondent was a physical education major in college with a 2.5 grade point average. He was married, had two children, taught and coached, and felt strongly that wrestling helped him gain his present status.

## San Fernando Valley State College, Northridge, California

266. COX, Kenneth M. The Status of Interschool and Intramural Athletics in the Elementary Schools of Oregon, 1962. M.A. in Elementary Teaching. 1963. 163 p. (A. E. Konold)
The purpose of this study was to determine the status of interschool and intramural athletics in the public elementary schools in the state of Oregon in order to obtain possible recommendations for standardizations of elementary school athletic programs in Oregon.

## Smith College, Northampton, Massachusetts (E. Way)

267. AYERS, Barbara. A Study of Parental Attitudes Toward the Value of Physical Education in the Total Educational Development of the Daughter. M.S. in Physical Education. 1963. 127 p. (E. Way)
Parents considered the activities and the outcomes of physical education programs either desirable or essential to the total educational development of the daughter. Parental attitudes toward physical education were not related to socioeconomic status.

268. BIXLER, Agnes Seelye. An Analysis of the Wembley Field Hockey Game Played Between the English and the United States Field Hockey Teams. M.S. in Physical Education. 1963. 154 p. (E. Way)
The Wembley field hockey game was filmed by the BBC on March 10, 1962. Analysis indicated very few differences in the playing tactics of

the two teams. The tactics exhibited by well-skilled players coincided in most instances with the tactics advocated in the literature.

269. IYO, Asikiyeofori. The Use of Ethnic, Folk and National Sources in Western Theater Dance. M.S. in Physical Education. 1963. 135 p. (H. Rogers)

The works of Michel Fokine, La Meri, Ruth St. Denis, and Ted Shawn were studied to determine the particular use of ethnic materials in their dance productions. The choreographers demonstrated that national sources can be transported elsewhere and presented in a meaningful way to an audience with a different cultural background.

270. MEYERS, Barbara A. An Investigation of the Effects of Bromine on Swimmer Eye Comfort. M.S. in Physical Education. 1963. 86 p. (E. Way)

Subjective evaluation by four groups of swimmers was employed to determine the effects of brom-chlor-dimethyl-hydantoin on eye comfort. Degree of reaction was recorded in the following categories: stinging and smarting, difficulty in keeping eyes open, blurred vision, rainbows or circles, and tears and watering. Stinging and smarting was the most significant criterion in determining the effect of a swimming pool disinfectant on eye comfort. In terms of swimmer eye comfort and ease of maintenance bromine was superior to either chlorine or iodine.

## South Dakota State College, Brookings, South Dakota

(G. E. Robinson)

271. FARRAND, Floyd D. A Study of Physical Fitness of Selected Students in South Dakota and Iowa. M.S. in Physical Education. 1963. 69 p. (A. C. Bundgaard)

272. HEAD, Dwayne G. A Comparison of Motor Abilities of Normal and Mentally Retarded Children. M.S. in Physical Education. 1963. 45 p. (M. Thomas Woodall)

273. HEGLE, Dennis L. The Effect of Immersion in a Heated Whirlpool Bath Upon Reaction Time, Arm and Shoulder Girdle Strength, and General Endurance. M.S. in Physical Education. 1963. 54 p. (M. Thomas Woodall)

274. JOB, Louis, Jr. Leisure Time Interests and Recreational Patterns of Delinquent Boys and Girls Prior to Their Entry into the South Dakota Training School. M.S. in Physical Education. 1963. 87 p. (E. Huether)

275. KELLY, Willis R. The Comparison of Two Training Programs, Isometric Contractions and Calisthenics, on Strength and Selected Body Measurements of Female College Freshmen. M.S. in Physical Education. 1964. 41 p. (G. Crabbs)

276. KERNS, Roger D. The Effect of an Isometric Training Program Upon Speed of Forearm Muscle Contractions. M.S. in Physical Education. 1964. 35 p. (M. T. Woodall)

277. PLINSKE, Michael D. A Comparison of the Effects of an Isometric Program, a Weight Training Program and an Isometric-Weight Training Program on Strength Development. M.S. in Physical Education. 1963. 35 p. (A. C. Bundgaard)

278. SHEFCYK, Dennis L. The Effect of Isometric Contraction and

Calisthenic Exercises on Strength Development of Male College Freshmen. M.S. in Physical Education. 1963. 40 p. (A. C. Bundgaard)

279. STERNER, John M. A Study of Flexibility in Wrestlers as Compared With Other Sport Groups. M.S. in Physical Education. 1963. 64 p. (A. C. Bundgaard)

280. THURNESS, Robert L. A Comparison of Attitudes of Male Students Toward Required Physical Education at South Dakota State College: 1963 and 1959. M.S. in Physical Education. 1963. 74 p. (G. E. Robinson)

### **Springfield College, Springfield 9, Massachusetts** (E. W. Seymour)

281. AGLI, James J. A Study to Determine the Effect of a Selected Skills Program on Physical Fitness. M.S. in Physical Education. 1963. 63 p. (C. Shay)
Subjects were 38 boys and 34 girls in three grade 6 classes. All were given Kirchner's Physical Fitness Test for Elementary School Children before and after 5 weeks of either volleyball, gymnastics, or rhythms, and the data were analyzed with analysis of covariance. The volleyball and gymnastics groups showed mean increases significant beyond the .01 level; the class engaged in rhythms had a mean increase significant between the .05 and .01 levels. The change in the volleyball group was significantly (.05) greater than that of the gymnastics group and even more significantly (.01) above that of the rhythms group. The change in the gymnastics group was significantly (.05) greater than that for the rhythms program.

282. AKERS, Frank. A Study to Determine Total Offensive Performance of the Major League Baseball Player. D.P.E. 1963. 181 p. (C. Shay)
Major league records and opinions of major league personnel were used to establish a composite rating for the offensive performance of a major league baseball player. Of the 16 major league clubs in existence at the initiation of the study, 13 cooperated in varying degrees. A jury of 16 experts evaluated the relative importance in offensive performance. Six major areas of offensive performance were identified and the weightings assigned to each provided a means of evaluating the contributions of individual players. Sample records of major league organizations were utilized to demonstrate how the evaluation formula might be applied to specific cases.

283. ATOKI, Frederick O. A. Physical Education in Nigerian Primary Schools. M.S. in Physical Education. 1963. 124 p. (A. Kidess)
Primary data were obtained from questionnaires sent to the Nigerian Regional and Federal Ministries of Education for distribution to randomly selected primary schools throughout Nigeria. Recommendations for more effective required and intramural programs in grades 2 through 6 were evolved from a critical analysis of syllibuses, social and economic factors, aims and objectives of physical education in Nigeria, characteristics of Nigerian children, and the available facilities and equipment.

284. BABBITT, Ray W. A Study to Determine the Relationship Between Student Teaching and Academic Index and First Year Teaching Evaluations and Academic Index. M.S. in Physical Education. 1963. 30 p. (C. Shay)
The academic index, student teaching grades, and first year teaching

evaluation records of 133 male Springfield College physical education graduates provided the data for this study. The relationship between student teaching grades and academic index was .357. Virtually no relationship (-.079) was found between academic index and evaluations following the first year of teaching.

285. BARNARD, Douglas M. A Selective Survey of Accidents Occurring in New England YMCA Physical Departments Between the Years 1960 and 1962 and a Suggested Preventive Program for Use by Physical Directors. M.S. in Physical Education. 1963. 80 p. (S. Shaw)

YMCA accident files and conferences with New England YMCA physical directors provided information concerning accident incidence rates in terms of different activity areas. A Safety Inspection Manual was constructed to assist physical directors in the prevention and handling of accidents.

286. BARNES, Frank W. A Survey of the Cross-Country Training Methods Used in the Public Secondary Schools of Connecticut. M.S. in Physical Education. 1963. 171 p. (C. Shay)

Questionnaires were distributed to 46 coaches; 26 responded, and 16 were interviewed. Considerable variation was evident in their preparation, their training techniques, and their utilization of weight training and dietary controls. Replies to the various items on the questionnaire were tabulated and percentages were determined to reflect the extent to which different practices were followed.

287. BAZZANO, Carmelo. A Study Designed to Build a More Protective Headgear for Boxing. M.S. in Physical Education. 1963. 40 p. (E. Steitz)

Three headgears presently used for boxing and a styrofoam football helmet were studied to ascertain their ability to absorb powerful blows. Double pendulums with ball-bearing pivots assured constant friction. A striking ball hit a stationary one ten times from 30° and then from 40° elevation. Displacement of the struck ball was measured by an electrogoniometer. Each protective headgear was in turn taped to the stationary ball to determine the reduction in angular placement. Each headgear afforded some protection. The football headgear built with styrofoam provided greater protection than the boxing headgears.

288. BOYER, Robert A. A Study to Determine the Effect of Weight Training in the Development of Leg Strength and Greater Velocity of the Ball in Soccer. M.S. in Physical Education. 1963. 72 p. (E. Seymour)

Twenty-one Springfield College soccer players were divided into two groups on the basis of kicking velocity as determined from a measured and timed kick. Leg strength was calculated for as the sum of knee extension and hip flexion cable tensiometer strength scores. An experimental group of eleven subjects participated in a 5-week training program of half squat knee bend, knee extension, and hip flexion exercises performed three times a week. At the end of this period all subjects were retested for kicking velocity and for leg strength. Analysis of covariance showed that experimental group improvement in leg strength was significantly (.01) greater than that of the control group. The gain in velocity of the kicked ball by the experimental group was significantly (.05) superior to that by the control group.

289. CARDINALI, Geoffrey A. The Development of a Motion Picture and Accompanying Manual of Selected Advanced Skills Executed To and From a Hand Balance Position on the Parallel Bars for Com-

petitive Gymnastics. M.S. in Physical Education. 1963. 70 p. (H. Childs)
Stunts listed in the Amateur Athletic Union Gymnastic Official Guide were categorized as mounts, dismounts, to and from the upper arm support position, to and from a straight arm support position, from a hand balance and to a hanging position below the bars, from a hand balance to a hand balance. A film was prepared showing each skill at 16 frames per sec. and a manual was developed explaining each skill and the key point relevant to its successful execution.

290. CARO, Fred J. Conditioning Effects of Two Wrestling Drills. M.S. in Physical Education. 1963. 54 p. (C. Shay)
Twenty freshman male students in a wrestling class were equated by weight to form a control group and two experimental groups. One experimental group engaged in a conditioning program (6 days per week for 3 weeks) consisting of a sit-out maneuver from a referee's position with a recovery to that position. The other experimental group had a conditioning program of the same duration similar to a football grass drill. The control group had no special conditioning program. Pre- and post-experiment data were gathered on cardiovascular endurance (Harvard Step Test—rapid form); muscular strength (Rogers' Strength Index—modified form); and reaction time, movement time, and performance time (Hale Reaction-Performance Timer). None of the groups improved significantly in any of the variables.

291. CRESS, Carolyn L. Morphological Bisexuality as a Factor in the Motor Performance of College Women. D.P.E. 1963. 115 p. (M. Thorsen)
One hundred and forty-seven Springfield College undergraduate women were photographed and somatotyped. The Humiston Test of Motor Ability, Sargent Jump, a 50-yd. dash, and Rogers' Strength Test were administered. Subjects were rated on androgyny by the Institute of Human Development, Berkeley, California. Relationships between motor performance and masculinity-feminity ratings showed that girls who possessed certain male characteristics in body structure performed physical activities better than those who did not. However, if a high andric rating accompanied a high gynic rating, the favorable relationship with motor performance was considerably reduced.

292. DE CRISTOFORO, James F. A Study to Determine the Fastest Method of Rounding First Base. M.S. in Physical Education. 1963. 52 p. (E. Steitz)
Ten varsity baseball players at Springfield College took five trials each with five methods of rounding first base. The trials were rotated to minimize warm-up or fatigue effects and were timed electrically by switchmats on the baselines 65 ft. before and 30 ft. beyond first base. The runners started from home plate. The methods, ranked in order of shortest mean time, were: rounding out at 60 ft. and touching with the left foot, same with the right foot, running directly to first and turning sharply, rounding out at 20 ft. and touching with the right foot, and the same with the left foot. No method was significantly faster at the 05 level.

293. DEEP, David P. A Football Training Film and Manuscript of the Springfield College Football Consistency Running Offense. M.S. in Physical Education. 1963. 79 p. (E. Seymour)
An analytical study was made of each running play in the 1962 offense and from this a 16mm training film and manuscript were developed to illustrate the play for linemen and backs in the consistency running offense. A consistency play is one which gains three or more yards at

least 60 percent of the time with plus yardage in at least 80 percent of the attempts.

294. DOSS, Wayne S. A Comparison of Concentric, Eccentric and Isometric Force of Elbox Flexors. D.P.E. 1963. 76 p. (P. Karpovich)
The effective force of elbow flexion during concentric motion, eccentric motion, and isometric contraction was measured with an electrical strain gauge throughout the movement. The angle of the elbow was recorded continuously by an electrogoniometer. The 37 subjects were given three trials in each action. Average eccentric force was significantly (.01) greater than average concentric or isometric force from 165° to 75° of elbow flexion; average isometric force was significantly (.01) greater than average concentric force; maximum concentric force was found at 125° of elbow flexion and maximum eccentric force was found at 105° of elbow flexion. The apparatus measured maximum effective force without placing physical restraints on the subjects.

295. DOUGLAS, John G. The Value and Limitations of Loop Movies in the Teaching of Wrestling at the University of Massachusetts. M.S. in Physical Education. 1963. 32 p. (C. Shay)
Two beginning wrestling classes at the University of Massachusetts were taught by different methods. The experimental group received instruction through loop movies and explanation and the control group taught by the conventional explanation-demonstration technique. The two groups were essentially equated on the Johnson-Metheny Motor Educability Test (t of .04) and the Rogers' Physical Fitness Index (t of .14). Following instruction, all subjects were evaluated for wrestling proficiency by two prominent wrestling authorities. When skill scores of the two groups were compared, the t was .22, indicating that significantly greater proficiency was not attained by the group taught with the loop movies.

296. FRANK, James. The Relationship of Some Selected Socio-Economic Factors to Changes in Physical Education Programs in Certain Localities in Missouri. D.P.E. 1963. 410 p. (C. Shay)
The study was designed to provide a better understanding of the relationship of socioeconomic factors to physical education. Historical analysis was made of the extent to which changes occurred in physical education as a result of legislative provisions, financial support, and racial integration. The study involved the public school systems of St. Louis and Kansas City, Missouri, together with eight schools in the central part of the state. Changes at Lincoln University, Harris Teachers College, and the University of Kansas City were also analyzed.

297. GERRARD, Marilyn J. A Study of the Organization and Administration of Selected High School Intramural Athletic Programs for Girls in Indiana. M.S. in Physical Education. 1963. 119 p. (J. Parks)
A questionnaire survey was made of 286 Indiana high schools to determine the extent to which they met the standards set by the Division of Girls' and Women's Sports of AAHPER. General practices conformed reasonably well with the standards. The weakest areas were those related to the health of participants and concern for the individual participant.

298. HAMILTON, George R. A Comparative Analysis of the Long Baseball Pass versus the Long Hook Pass in Basketball. M.S. in Physical Education. 1963. 63 p. (E. Steitz)
Subjects were 13 high school basketball players who threw each type of pass to the top of the opposite free throw circle 25 times after recovering

a rebound and after receiving a throw in. The locations for staring and completing passes were standardized so comparison was made on the basis of time to the nearest .01 sec. for accurate passes. Inaccurate passes were tallied. The hook pass was .056 sec. faster from the rebound and .029 sec. faster from the throw in with the significance at the .01 and .05 levels respectively. The hook pass was more accurate from the rebound and the baseball pass from the throw in but the respective chi-squares of .253 and .711 were not significant.

299. HILSENDAGER, Donald R. Ergogenic Effect of Glycine and Niacin Separately and in Combination. D.P.E. 1963. 97 p. (R. Frost)
Glycine, glycine and niacin, niacin, and a placebo were administered by the double blind method and groups were rotated to provide their own control. Twenty subjects received medication 2 hr. and 1 hr. before muscular endurance was measured on a bicycle ergometer. Ten subjects received medication 5 min. before the test and 10 subjects received medication between two test bouts. Muscular endurance was not significantly changed either by the medication or by the time of administration. An identical experiment with a forearm flexion ergometer produced similar results. Systolic blood pressures of 26 subjects in the arm ergometer experiment, measured immediately before and after a bout, showed no significant effect of the two medications but arm flexion strength increased significantly as a result of training.

300. HOLT, Laurence E. A Comparative Study of Selected Handball Techniques. M.S. in Physical Education. 1963. 41 p. (C. Silvia)
The straight arm stroke and the elbow flexion-extension (circular) stroke in handball were compared. Velocity was computed from the interval, measured by the Hale Reaction-Performance Timer, between striking the handball from a stationary mounting and contact with the front wall. For 11 subjects, a significant difference in time beyond the .01 level favored the flexion-extension stroke. Film analysis revealed a leverage superiority for this method and showed that it required considerably less time to execute.

301. HUGHES. Thomas. A Study of Personality Characteristics of a Selected Group of Springfield College Freshmen. M.S. in Physical Education. 1963. 79 p. (C. Shay)
Data from the Edwards Personal Preference Schedule administered to the Class of 1964 at Springfield College during the fall of their freshman year were used to compare freshman athletic teams on the different variables. Comparisons were also made between numeral winners in team and individual sports, and between double-, single-, and non-numeral winners.

302. KASSO, Richard A. A Comparison of Two Methods of Leading Off First Base. M.S. in Physical Education. 1963. 34 p. (E. Seymour)
After a full day of supervised practice, 10 high school baseball players took 10 timed trials running toward second base from a 4-ft. walking, 6-ft. walking and stationary, and an 8-ft. stationary lead off first base. Time was measured from the appropriate distance from first base to a line 25 ft. from first base. The 6-ft. walking lead was significantly faster and the 6-ft. stationary lead was significantly slower at the .01 level than the 4-ft. walking and 8-ft. stationary leads which had identical mean time.

303. LEIGHTON, Ann M. A Study to Determine the Relation Between Body Build and Selected Personality Traits of Springfield College Women. M.S. in Physical Education. 1960. 45 p. (M. Thorsen)
One hundred Springfield College women students were somatotyped and

had completed the Edwards Personal Preference Schedule. The basic conclusion was that little relationship existed between constitutional body types and the personality traits measured. However, "intraception" and ectomorphy related positively and significantly (.05). Among physical education majors, there was a significant negative relationship (.01) between endomorphy and a significant positive relationship (.05) between mesomorphy and "nurturance."

304. McCORKLE, Richard B. A Study of the Effect of Adhesive Strapping Techniques on Ankle Action. M.S. in Physical Education. 1963. 95 p. (P. Karpovich)
Electrogoniometer measurements showed that three different strapping techniques reduced ankle flexion-extension 6.4° or 6 percent but with skillful strapping, the restriction did not increase agility run times.

305. McCORMICK, James J. A Study to Determine the Effects of Isometric Exercise on Speed of Leg Movement Involved in Place Kicking. M.S. in Physical Education. 1963. 51 p. (C. Shay)
Springfield College male freshman served as subjects: 15 participated in a 5-week isometric training program and 14 served as a control group. Data obtained initially consisted of speed of leg movement in .01 sec. and distance in feet of a place kick. Retest results showed a significantly (.01) greater increase in speed of movement for the experimental group but the change in kicking distance did not approximate significance. Thus while additional force may be developed, coaching in its proper application seemed imperative.

306. McKEE, Albert E. Variations in the Direction of the Pitcher's Stride and Their Effect on Speed and Control of the Pitched Ball. M.S. in Physical Education. 1963. 55 p. (E. Seymour)
Eight right-handed pitchers threw with a normal stride but with the left foot landing on and 6, 12, and 18 in. to the left of a line from the center of the pitching rubber to the center of home plate. Control was measured with a canvas target which was marked with concentric rectangles shaped like the normal strike zone. Ball speed was measured with a Hale Reaction-Performance Timer by coating the ball with aluminum foil and having electrodes in the pitcher's hand and catcher's mitt. Analysis of variance for correlated means gave nonsignificant F's under 1.00 for difference in accuracy and speed resulting from the variation in landing position of the left foot. The correlation between speed and accuracy for the composite results was .55 and the correlations for the separate landing positions were .46, .14, .49, and .33.

307. MILLER, Robert G. A Study to Determine the Relationship of Reaction Time to the Speed of a Softball. M.S. in Physical Education. 1963. 32 p. (C. Shay)
The subjects, 229 college freshmen, were found to have a mean reaction time of .20 sec. Nine softball pitchers were used to determine the speed of a pitched softball. The fastest pitch took .43 sec. and the slowest took .60 sec. Since at least 21 ft. remained for the ball to travel after reaction time had ended, the batter would have sufficient time to complete his swing and hit the ball at a point over or in front of the plate.

308. MOLDOVANYI, Stephen I. Suggested Principles and Procedures for the Organization of International Competition. M.S. in Physical Education. 1963. 273 p. (A. Kidess)
Through personal participation and observations, correspondence with international authorities, review of programs, newsletters, bulletins and newspapers, and extensive review of the literature dealing with

international competition, principles and recommendations relative to the conduct of such competition were formulated.

309. MUNCH, Louis R. A Five-Year Program for the Professional Preparation of Male Physical Education Teachers at Springfield College. M.S. in Physical Education. 1963. 198 p. (R. Frost)
Questionnaire returns from 108 institutions offering 5-year programs in physical education and/or teacher education, comprehensive review of the literature, analysis of certification requirements in 19 states, and the physical education philosophy at Springfield College provided the basis for the proposed program. The program included a strong background in physical education, a minor elective, a broad general education with emphasis on science, a relationship of theory and practice, and nominal financial compensation during interneship.

310. NICHOLSON, Carolyn. A Study to Determine the Relationship of Selected Anthropometric Measurements to Leg Strength. M.S. in Physical Education. 1963. 52 p. (C. Shay)
One hundred Springfield College women were tested with the leg dynamometer and were photographed with points marked by the Ott Rotary Planimeter. A number of anthropometric measurements were correlated with leg strength. Lateral thigh area correlated highest (.418) with leg strength. Lateral thigh area, bi-acromial diameter, 2 (depth X width of the ankle/depth X width of the knee), length of the upper leg from the gluteal fold, bi-iliac diameter, knee width, lateral thigh area X anterior thigh area, the square root of (lateral thigh area X anterior thigh area), and length of the upper leg from the trochanter produced an R of .513 with leg strength. The multiple correlation, although significant well beyond the .01 level, was insufficient for effective prediction of leg strength.

311. POTTER, Diane L. A Comparison of the Effect of Skill Practice Sessions and Upper Extremity Isometric Exercise Sessions on a Softball Throw for Distance. M.S. in Physical Education. 1963. 77 p. (C. Shay)
Two groups of undergraduate women at Springfield College were equated initially on throwing ability. The throwing group received instruction in the overhand throw and practiced for distance 3 days a week for 5 weeks. The exercise group had isometric exercises in three phases of the throwing motion 3 days a week for 5 weeks. Retest results showed that the throwing group increased significantly while the exercise group did not. Analysis of covariance showed mean gain of the throwing group was significantly greater (.01) than that of the exercise group.

312. RACKLIFF, June A. A Manual for Elementary School Teachers Relating Music to Children's Rhythms. M.S. in Physical Education. 1963. 153 p. (R. Evans)
Curriculum guides from Connecticut schools; books and periodicals; and discussions with classroom, physical education, and music teachers provided the basis for a manual which enabled the elementary classroom teacher to make better use of published materials for teaching rhythms. A section was devoted to construction of musical instruments and suggestions were provided for effective ways of combining music and movement.

313. ROSENSTEIN, Irwin. A Comparison of the Physical Fitness of Senior High School Boys and Girls Participating in Selected Physical Education Programs in New York State. D.P.E. 1963. 140 p. (R. Frost)
The New York Physical Fitness Test was administered in October and

May to pupils of 13 senior high schools in which physical education programs had been rated low by members of the Bureau of Physical Education and 16 in which programs had been rated high. The LaPorte Score Card was utilized to validate these ratings. The amount of participation in physical activity outside of class was recorded by each pupil and the effect analyzed. Pupils participating in good programs improved significantly more in physical fitness than participants in poor programs. The greatest improvement was in strength, with some gain in agaility, balance, and endurance.

314. SINGH, Sukhwant. Mechanical Adjustments of Cycling for Safety, Comfort, and Speed. M. Ed. in Physical Education. 1963. 109 p. (E. Steitz)
Cycling was studied in terms of basic mechanical principles, safety, comfort, and efficiency according to the capabilities of the individual cyclist. Items considered included weight of the machine, saddle adjustment, gear ratio, turning procedure, friction reduction, wind resistance, and tire inflation.

315. STEITZ, Edward S. The Relationship of Reaction Time, Speed, Sargent Jump, Physical Fitness, and Other Variables to Success in Specific Sports. D. P. E. 1963. 252 p. (R. Frost)
Subjects were 196 Springfield College male students who participated in one of nine freshman sports. They were tested for reaction time, performance time, speed, Sargent Jump, and physical fitness. The coach for each sport ranked each squad member in terms of overall value as a performer. The ratings were converted to numerical values as a criterion of "success in sports." Multiple correlations were computed for each of the activities and t ratios were determined for possible differences between the teams. The reaction time of the left foot moving left, the Sargent Jump, and the reaction time of the right foot moving left were the variables appearing most frequently in the multiple correlations.

316. THAXTON, Nolan A. A Survey of the Grading Practices in the Boys' Physical Education Classes in the Senior Public High Schools of Long Island, New York. M. S. in Physical Education. 1963. 90 p. (C. Shay)
Questionnaire returns were obtained from 53 of the 96 senior public high schools on Long Island, New York. Grading practices in these schools differed considerably from the grading plan established by Miller K. Adams. Other phases of the physical education classes were compared with standards contained in LaPorte's The Physical Education Curriculum.

317. WATERMAN, Hawley C. A Compilation of Lacrosse Extra-Man Plays Against Varied Defenses. M. S. in Physical Education. 1963. 213 p. (E. Seymour)
A questionnaire requiring play diagramming and description of play was mailed to all active lacrosse coaches as listed in the Lacrosse Guide and 33 responded. Plays were grouped according to the offensive formations each coach used to attack the five stipulated defenses. Diagrams of all plays were included in the report. Conclusions were drawn concerning the most effective ways of utilizing the extra-man advantage and the ideal qualifications for the different offensive players were described.

318. WHITNEY, Leonard A. An Evaluation of Selected Physical Fitness Programs with Recommendations for a Standard Physical Fitness Program. M. S. in Physical Education. 1963. 81 p. (F. Geisler)
Thirty-nine YMCA's in the Ohio-West Virginia area completed a questionnaire designed to determine the present status of their physical fitness

programs. Returns were evaluated by 18 criteria for a good program and the percentage of YMCA's satisfying each criterion was listed. The criterion with the greatest deficiency was the one recommending that each association sponsor a physical fitness clinic or workshop. Program improvements were recommended.

319. WILLIAMS, David O. A Proposed Intramural Program Guide for Boys Grades 9-12 in the Public High Schools of Richmond, Virginia. M.S. in Physical Education. 1963. 141 p. (E. Seymour)
Published and unpublished materials were reviewed. Principals, directors of intramurals, and all boys in grades 9 through 12 in the five high schools were surveyed by questionnaire. Slightly over half the boys returned activity preference questionnaires. Activities for the program were suggested and recommendations for the conduct of the program were made.

320. YANKURA, Thomas W. A Survey of the Use of Audio-Visual Aids in Training Volunteer and Part-Time Staff for YMCA Physical Education in the State of Pennsylvania. M.S. in Community and International Services. 1963. 94 p. (H. Harlow)
The results indicated that reasonably sufficient audiovisual equipment was available. A very definite need was indicated for trained personnel to use the aids to promote leadership training and provide helpful teaching materials. A recommended list of equipment was prepared and it was recommended that each Association should evaluate its own audiovisual program.

**Texas Woman's University, Denton, Texas** (A. S. Duggan)

321. CADY, Ruth Marie. A Study of the Interrelationships of Professed Health Practices, Acquired Health Information, and Socioeconomic Status of Freshman Women with Implication for the Requirement of Health Instruction at Sam Houston State Teachers College in Huntsville, Texas. Ed.D. in Health Education. 1963. (R. Amos)
Biographical information was collected from 361 freshman women who were given the Johns and Juhnke Health Practice Inventory, Kilander Health Knowledge Tests, and McGuire-White Index of Value Orientation (to determine socioeconomic status). Hypotheses concerning a positive relationship between socioeconomic status, professed health practices, and acquired health knowledge were rejected. The group was predominantly lower middle class. Health knowledge and practices of the five social status groups were essentially similar and showed little relation to their religious affiliation or the educational background of their mothers. Subjects from rural areas scored significantly higher in health knowledge than urban subjects, although their health practices scores were similar.

322. DAVIDSON, Mary Ella. A Handbook of Selected Formal and Informal Dramatic Activities, Including an Annotated Bibliography, for Recreation Leaders and Groups. M.A. in Recreation. 1963. (B. Myers)
The available materials were not adapted for recreational situations or for use by persons relatively untrained in dramatics. The Formal Dramatics section of the handbook covered acting, directing, and production techniques. The Informal Dramatics section covered pantomime, dialogue, story dramatization, story-telling, puppets, and choral speaking. The selected dramatic activities were suitable for 4-H Clubs, Boy and Girl Scout troops, recreation centers, summer camps, and church groups. An annotated bibliography was included.

323. INGRAM, Dorothy. Jesse Feiring Williams: His Life and Contributions to the Field of Health, Physical Education, and Recreation. Ph.D. in Physical Education. 1963. (A. S. Duggan)
The study was concerned primarily with biographical material and covered the subject's early life, educational background, professional life, and professional influence in health, physical education, and recreation to the extent that personal and documentary sources were available. The procedures followed in developing the biography were described and recommendations were made for similar studies.

324. LOWRY, Carla. A Comparative Study of the Effect Two Sets of Dissimilar Basketball Rules Have on the General Motor Ability, Basketball Motor Ability, and Selected Basketball Skills of Women Students Enrolled in Two Basketball Classes. M.A. in Health and Physical Education. 1963. (B. Myers)
The Humiston Motor Ability Test, Wisconsin Basketball Tests, and a Basketball Motor Ability Test Battery devised by the author were administered to both classes before and after a semester of basketball. The class using the two-court division rules (DGWS, 1961-62) improved significantly in motor ability but did not improve significantly in basketball motor ability or achievement. General motor ability was related significantly to improvement in basketball motor ability and initial basketball motor ability was significantly related to improvement in general motor ability. The class using the roving player rules (DGWS, 1962-63) improved significantly in general motor ability and also improved significantly in basketball motor ability and in two of the three basketball skill tests. General motor ability was significantly related to achievement in basketball and initial basketball motor ability was significantly related to both achievement in basketball skills and improvement in general motor ability.

325. McGOLDEN, Audrey. Professional Education for Careers for Women in the Field of Health, Physical Education, and Recreation with the Production of a Motion Picture Film Illustrating Such Preparation Through Class and Extraclass Activities Available to Major Students in the College of Health, Physical Education, and Recreation at the Texas Woman's University in Denton, Texas. Ph.D. in Physical Education. 1963. (C. Sherrill)
Career information was collated concerning current and predicted personnel shortages, personal and professional qualifications, salary ranges, opportunities for advancement, and other benefits and gratifications accruing from employment. A 16mm color movie with sound was prepared illustrating the professional education of women for careers through class and extra-class activities at Texas Woman's University.

326. POINDEXTER, Betty. Ted Shawn: His Personal Life, His Professional Career, and His Contributions to the Development of Dance in the United States of America from 1891 to 1963. Ph.D. in Dance and Related Arts. 1963. (A. S. Duggan)
Within the limits of the personal and documentary sources available, the biography covered the subject's early life; educational background; personal interests and hobbies; his dance education; his professional dance experiences including his early career, affiliation with Denishawn, the men's group, founding and developing Jacob's Pillow into the University of the Dance and Jacob's Pillow Dance Festival, Incorporated; his concerts, lectures, writings, awards and honors; and contributions to the development of dance as judged by authorities in art and education. Procedures followed in developing the biography were described and recommendations for similar studies were made.

**University of Utah, Salt Lake City, Utah** (N. P. Neilson)

327. BUSHMAN, Ben Robert. Analysis of the Speed and Height of the Overhand Flat Volleyball Serve. M. S. in Physical Education. 1963. 34 p. (O. N. Hunter)

The problem was to determine, by 16mm motion picture film analysis, the most desirable speed and height of an excellent overhand flat volleyball serve as judged by a board of experts and as tested by the ability of an opposing team to return the serve. A serve that traveled low to the net and with maximum speed but stayed in bounds was the most difficult to return.

328. HEINER, Steven Warner. The History of Interscholastic Athletics at West High School. M. S. in Physical Education. 1962. 155 p. (N. P. Neilson)

An historical account of interschool athletics at West High School, Salt Lake City, Utah, was prepared including, in chronological order, a background of coaching staffs, team rosters, won-lost records, and other significant events related to interscholastic athletics.

329. HURZELER, Arthur, Jr. Capacity Scales in Physical Education Activities. M. S. in Physical Education. 1962. 38 p. (N. P. Neilson)

The primary problem was to develop capacity scales for junior high school boys (grades 7, 8, 9) in the broad jump and 75-yd. dash. Learning curves and correlations were evaluated and two capacity scales constructed.

330. JACKSON, John Nick. Student Injuries in Physical Education in the Salt Lake City Schools. M. S. in Physical Education. 1963. 78 p. (N. P. Neilson)

The general problem was to determine the nature and pattern of injuries which occur during physical education activity. Frequency of injuries, age factor, time of day injuries occurred, and the part of the body most frequently injured were studied. An annual record of 2.2 percent of the 16,584 secondary students injured does not appear to be excessive. The greatest number of injuries were minor in nature and extent.

331. JENSON, Robert Gene. An Evaluation of Physical Education for Elementary Schools. M. S. in Physical Education. 1963. 146 p. (N. P. Neilson)

The general problem was to evaluate programs of physical education for the elementary schools of the Palo Alto Unified School District in California. Ten school programs were evaluated by use of the Neilson-Arnett score card. Schools were appraised of the strong and weak points in their programs.

332. LEE, Larry Gordon. The Effects of Athletic Participation Upon Scholastic Achievement. M. S. in Physical Education. 1963. 34 p. (O. N. Hunter)

Effects were determined of intercollegiate athletic participation upon the scholastic achievement of 47 college athletes registered in the Colleges of Business and Education at the University of Utah. Athletic and nonathletic groups were equated as to total number of subjects, years in college, same field of study, and predicted grade point averages. In general, athletes achieved less than did nonathletes. However, the difference decreased as years in school increased.

333. NEAL, Patsy E. Personality Traits of United States Women

Athletes Who Participated in the 1959 Pan-American Games, As Measured by the Edwards Personal Preference Schedule. M.S. in Physical Education. 1963. 64 p. (O. N. Hunter)
There were significant differences in the traits possessed by the women athletes and the traits possessed by the norm group.

334. NIELSEN, Gerald O. Effect of Weight Training on Basketball Shooting Accuracy. M.S. in Physical Education. 1963. 61 p. (N. P. Neilson)
An increase in one-hand basketball set shooting accuracy resulted after participation in a progressive weight training program. The belief that weight training is harmful to basketball shooting skills should be discounted.

335. PLAGA, Gean Arthur. The History of Interscholastic Athletics at Carbon High School. M.S. in Physical Education. 1963. 159 p. (N. P. Neilson)
The problem was to present in chronological order an historical account of interscholastic athletics at Carbon High School, Price, Utah. Included were brief backgrounds of the coaching staffs, team rosters, won-lost records, and related facts.

336. RICHARDSON, Howard Dee. The Effects of Weight Training Upon Accuracy In Shooting the Basketball Jump Shot. M.S. in Physical Education. 1962. 43 p. (J. F. Davis)
The general problem was to determine the effect of a progressive weight training program on the accuracy of shooting the jump shot in basketball. Jump shot shooting skill of 19 high school and college varsity basketball players was measured before and after participation in a weight training program.

337. SANCHEZ, Robert Hall. Pre-Season Baseball Training for High Schools. M.S. in Physical Education. 1963. 89 p. (A. Simone)
The problem was to present an indoor varsity practice baseball program for Utah high schools. Results indicated that the proposed indoor practice baseball program could be used effectively in the high school to develop team and individual potentials.

338. SNEDDON, Russell Clyde, Jr. The Teaching and Coaching Contributions of Vadal Peterson. M.S. in Physical Education. 1963. 78 p. (O. N. Hunter)
The life, philosophies, and educational experiences of Vadal Peterson, who for many years was a successful basketball coach, are described.

**University of Washington, Seattle 5, Washington**
(R. K. Cutler and M. R. Broer)

339. ANGLE, Nancy Kay. The Effect of a Progressive Program of Exercise, Using the Exercycle, on the Flexibility of College Women. M.S. in Physical Education. 1963. 82 p. (M. R. Broer)
The Leighton Flexometer was used to measure the flexibility of the right and left shoulder, knee, and ankle, the hip, and the lower back before and after the experimental program. Subjects were women enrolled in the Winter Quarter at the University of Washington in 1963. The work group (N = 27) and relaxed group (N = 16) rode the Exercycle 15 min. daily, five days a week for six weeks. The work group started working against the Exercycle as hard as possible for three 30-sec. periods during their ride and these work periods were increased progressively. The relaxed group merely sat on the Exercycle. The Control Group (N = 19) did not

participate in any physical education activity class. Riding the Exercycle relaxed appeared to develop flexibility more than exercising on it. Working on the Exercycle effectively increased shoulder flexion, hip extension, and total hip flexibility. Riding relaxed effectively increased shoulder extension, hip extension, and total hip flexibility. Knee and ankle flexibility did not increase effectively.

340. COX, Gay Anne. The Effectiveness of Instruction Using a Visual Electronic Unit in the Development of Beginning Bowling Skill of College Women. M.S. in Physical Education. 1963. 58 p. (M. R. Broer)

Eighty women in five beginning bowling classes at the University of Washington during the Winter Quarter of 1962 were divided into experimental and control groups on the basis of the Scott Motor Ability Test and hand grip strength. Both groups had identical instruction in the same classes but the experimental group bowled on lanes with the visual electronic aid ("Hot Spot"). On the basis of the average of all games bowled, of the best five games, and of the last five games, the visual electronic aid appeared quite effective in helping the beginning bowler to aim at the one-three pocket.

341. DONAGHE, Sheila Janell. The Effect of a Ten-Minute Period of Progressive Rope Jumping Exercises on Certain Elements of Physical Fitness and on Badminton Achievement of College Women. M.S. in Physical Education. 1963. 100 p. (K. Fox)

A beginning badminton class (N = 29) at the University of Washington during the Winter Quarter of 1962 served as the control group and a second class (N = 27) served as the experimental group. Physical fitness test items consisting of squat-thrust, toe-touch, curl-ups, pull-ups, an agility run, the Fox Beginning Badminton Written Examination, Miller Wall Volley Test, and Scott-French Badminton Serve Test were administered before and after the 10-period instructional unit. The experimental group had 10 min. per period of progressive rope jumping exercise. The rope jumping exercise effectively increased physical fitness but not necessarily more than badminton instruction alone. The loss of 10 min. resulted in slightly less gain in the wall volley and short serve tests but did not appear detrimental to the acquisition of badminton knowledge. Endurance, as measured by squat-thrusts, did not improve more from rope skipping than from badminton alone.

342. ECKERSON, John Donald. The Status of the Athletic Coach as an Informal Counselor in Six Selected Class AA High Schools of Western King County, Washington, 1961. M.S. in Physical Education. 1962.

Of 48 head varsity coaches and 12 administrators in six high schools, 38 responded to two questionnaires. Administrators considered that coaches exercised a greater role than noncoaching faculty members in informal counseling concerning personal, social, and educational problems because of their unique rapport with students, especially athletes. More than half the coaches estimated that 10 percent or more of their school activities time was devoted to informal counseling and that they averaged one conference per day throughout the school year with student athletes. Most of the coaches had little professional counseling training and only 40 percent indicated a desire to participate full or part time in the formal guidance program.

343. FISCHER, Bradley H. Interrelations Between Cross Country Performances, Fitness Test Scores, and Cardiorespiratory Reactions of Selected High School Athletes. M.S. in Physical Education. 1963. 90 p. (R. K. Cutler)

Correlations computed with an IBM 709 showed positive and significant relations between cross-country performances in the final dual meet and fitness test scores; milliliters of oxygen per body weight during a treadmill run; and resting, exercise, and recovery heart rate 3 min. after exercise. The correlations with ventilation, oxygen consumption, respiratory efficiency, oxygen pulse, and duration of treadmill run were not significantly different from zero. The cross-country runners scored very high collectively on the fitness tests.

344. GEARHART, Everett E. An Evaluation of Performances in Selected Physical Ability Tests by Elementary School Boys Classified on the Basis of Wetzel Grid Developmental Levels. M.S. in Physical Education. 1963. 54 p. (R. K. Cutler)
Boys in grades 5, 6, and 7 (N = 633) were divided into six developmental level groupings and tested in the softball throw for distance, football punt, standing broad jump, push-ups, and 50-yd. dash. Mean performances increased with developmental level but the mean differences between levels were generally not significant at the .05 level. Standard score tables were constructed with a 6 standard deviation range from 0 to 100.

345. HOHL, Judy Ann. The Comparison of Two Stroke Progressions in Teaching the Breast Stroke to College Women. M.S. in Physical Education. 1963. 107 p. (M. R. Broer)
Data were obtained from 54 women in four swimming classes at the University of Washington during the Winter Quarter of 1963. Two instructors each taught one class using the progression of elementary back, side, and breast stroke and one class with the back, breast, and side stroke progression. All subjects spent the first six (of 20) 50-min. periods adjusting to the water and learning the dog paddle and elementary back stroke. Fifteen minutes of the next six periods was spent in instruction on the side or breast stroke and equal time in the next periods on the breast or side stroke as appropriate. The remaining time in each period was spent reviewing previous strokes and learning other skills. The Stroke Count Test developed by Kilby was used initially to test subjects able to swim a length of the pool and after each stroke was considered "learned." Kilby's revision of the Stop Watch Test for buoyancy by Cureton was also given but showed little correlation with ability in the back, side, or breast stroke. Ability to swim one or two lengths of the pool with the side or breast stroke developed more rapidly in whichever stroke was learned last. A more efficient and stronger breast stroke resulted when it was learned before the side stroke and previous instruction in the breast stroke did not adversely affect the development of efficiency in the side stroke. Learning the side stroke before the breast stroke did not appear to foster the use of a "scissors-type" kick in the breast stroke.

346. JACKSON, George Paul. The Status of Basketball Coaching in Selected Elementary Schools of King County, Washington, 1962-63. M.S. in Physical Education. 1963. 80 p. (G. S. Reeves)
A survey of elementary school basketball coaches showed that they averaged four years coaching experience, had less than 20 hr. training in physical education, had not recently attended a coaching clinic, did not subscribe to a coaching journal, and had not participated in varsity basketball beyond junior high school. They considered the players sufficiently mature to benefit from instruction, to learn good sportsmanship, several offensive and defensive patterns, a close hook shot, and boxing out on rebounds, but they should have three to four weeks practice before interschool competition and should not be limited to one type of free throw. The coaches recommended instruction at the physical education class, intramural, and interschool levels, using a syllabus

for sequential instruction, teaching more than one definite pattern of offense and defense, and teaching officiating to foster tolerance of officials, but not encouraging community sponsored leagues.

347. JEWELL, Ruth Louise. An Evaluation of the Olympic College Basic Campcraft Course. M.S. in Physical Education. 1963. 380 p. (M. R. Broer)

The course consisted of a two-week, 70-mile backpack trip through the Olympic National Park wilderness areas with instruction in botany, zoology, geology, meteorology, astronomy, photography, sociology, camping skills, and mountaineering. Questionnaire returns were obtained from 78 percent of the 268 persons who had completed the course once or more since its inception in 1951 through 1961. Favorable changes were noted for male and female participants from 8 to 70 years of age in knowledge, skill, and attitude concerning nature, camping, group living, wilderness travel, conservation, and outdoor education. This indicated that the basic objectives of the course were being realized and that the present subject matter areas should be continued.

348. JONES, Lavetta Sue. The Effect of a Progressive Program of Exercise, Using the Exercycle, on Anthropometric Measurements of College Women. M.S. in Physical Education. 1963. 103 p. (M. R. Broer)

Measurements of height; weight; circumferences of the upper arms, forearms, thighs, calves, hips, and waists; and subcutaneous fat over the triceps, on the abdomen, and below the scapula were taken on 62 volunteer students before and after a 6-week exercise program. Two experimental groups rode the Exercycle daily, Monday through Friday; the work group exerted maximum force to increase the movements of the machine and the relaxed group offered little or no resistance to movement by the machine. Members of the control group were not enrolled in a physical education class. Comparison within groups showed that the work group had no significant changes, the relaxed group had a significant reduction in fat over the triceps, and the control group had a significant reduction in fat over the triceps and on the abdomen. Comparison of the differences between mean changes among groups showed that all differences were slight and not significant except that the circumference of the left forearm and the triceps fat reduced significantly more in the relaxed group than in the work group, and the circumference of the calves reduced significantly more in the work group than in the relaxed group.

349. JOSEPH, Jack J. An Analysis of Progressive Pulse Rate Test Scores and the Enlargement of the Area Beneath the Brachial Pulse Wave Graph of Adult Males as Affected by Frequency of Participation in Physical Conditioning Programs. M.S. in Physical Education. 1963. 112 p. (R. K. Cutler)

A random sample of 50 adult male members of the Seattle Downtown YMCA participated in the study. Left brachial pulse waves (Cameron Heartometer), Progressive Pulse Rate Tests (University of Illinois), sitting pulse, weight, height, smoking habits, and daily coffee consumption were recorded before and after approximately 21 weeks participation in the regularly scheduled physical education program. Twenty-six subjects whose average attendance was 1.91 times per week were classed as poor attendees and the remaining 24 who averaged 2.97 times per week were considered good attendees. The reduction in body weight was not significant. The total group showed a significant improvement (5 percent level) in the 18, 24, 30, and 36 steps per minute parts of the Progressive Pulse Rate Test and the poor attendees separately showed a significant improvement at 30 steps per minute. The mean area under the pulse wave was enlarged after exercise, but not significantly. The mean sitting pulse rate for the total group and good attendees reduced significantly. Significant correlations (1 percent level) were found between the area under the pulse wave, the Progressive Pulse Rate Test, and the sitting pulse rate.

350. KEELER, Marcia Jane. An Overview of the History of the School of Physical and Health Education, Department for Women, at the University of Washington with Special Emphasis on the Faculty. M.S. 1963. 144 p. (M. R. Broer)

The University was founded in 1861 and the Department for Women was separated from the Department for Men and the Health Services in 1920. The major areas of concern from 1920 until June 1963 were major programs in physical education, health education, recreational leadership, and prephysical therapy, the recreational program, and the graduate program. Sample curricula and a complete listing of faculty members with their years of service, ranks, and degrees were included.

351. KINGSBURY, Keith W. An Analysis of Budget and Financial Practices Utilized by Physical Education Departments in the First Class School Districts of Washington State for 1963. M.S. in Physical Education. 1963. 85 p. (N. F. Kunde)

In almost all school districts a physical education budget was prepared cooperatively by all staff members. The major budgetary items were: (a) equipment and supplies and (b) laundry and cleaning. Financial support came from general school district funds. Procedures for approving the budget differed considerably. Departments usually kept inventories and found them useful in budget planning. Most school districts had specific policies concerning the procurement of bids, priority scheduling, and disbursement of funds. Final approval of purchase requests was usually vested in the principal or superintendent. A minority of schools provided a petty cash fund. Physical education budget operations were evaluated by almost all school districts.

352. LANG, Larry L. An Investigation of the Feasibility of Establishing a Community Youth Camp for Moose Jaw, Saskatchewan, Canada. M.S. in Physical Education. 1963. 91 p. (R. K. Cutler)

Existing camps provided for approximately 400 campers annually, or less than 5 percent of the school-age children. The results of questionnaires distributed to parents and selected community organizations indicated that the establishment of a community youth camp was desirable and also feasible in terms of expected community support. Suitable camp sites involving minimal capital outlay were available in the area.

353. LEADBETTER, John R. Changes in Certain Cardiorespiratory Reactions and Physical Ability Test Scores of Selected Ninth Grade Males as a Result of Training in Distance Running. M.S. in Physical Education. 1963. 115 p. (R. K. Cutler)

Nineteen grade 9 male students ran on a treadmill at various speeds and grades to determine maximal heart rate, ventilation, oxygen consumption, milliliters of oxygen per kilogram of body weight, and duration. Ability to perform dips, jump and reach, and 10- and 60-sec. squat thrusts were also measured. The subjects were retested after a 5-week program of interval training, fartlek, and long distance runs. Oxygen consumption and run duration showed significant improvement at the 5 percent level. Improvement in jump and reach was significant at the 1 percent level. Improvements in the other tests were not significant.

354. LINDER, Ronald L. A Comparison of Certain Cardiovascular Measurements of Varsity Crew-men as Determined by Pre-Season

and Mid-Season Test Performances on the Treadmill. M.S. in Physical Education. 1963. 81 p. (R. K. Cutler)
Preseason and midseason treadmill runs at 3.4, 5, and 6 mph with 14, 18, and 22 percent grades, respectively, were administered to 21 varsity crew members of the University of Washington. Aside from run duration, blood pressure was measured before and after the runs and heart rate was measured before, during, and following the runs. Mean run durations increased 52.86 sec., which was significant at the 5 percent level. Mean resting and exercise heart rates decreased significantly at the 1 percent level. The recovery heart rate differences at 2 and 3 min. were significant at the 1 percent level. Participation in the varsity rowing program increased the endurance and cardiovascular condition of the crew members.

355. MAURO, Carmen L. Relationships Between College Baseball Batting Averages and Selected Visual Skills. 1963. M.S. in Physical Education. 1963. 85 p. (G. S. Reeves)
The 1962 and 1963 batting averages of selected University of Washington and Seattle University baseball players were obtained. Two local optometrists administered Opthalmoscope, Snellen, Arc-Perimeter, Retinoscope-Phoropter, Keystone Telebinocular, and Tachistoscope tests. Rank-difference correlations of batting averages for the Seattle University players were .71 and .77 with the Retinoscopic-Phoropter test, -.73 with the Keystone Telebinocular, and .56 with the Tachistoscope. The University of Washington data showed correlations of .53 and .66 with the Retinoscopic-Phoropter test and a correlation of .50 with the Tachistoscope test. All other correlations were negligible.

356. MINAHAN, Fred B. An Experiment with a Restrictive Goal Device Designated to Improve Basketball Free Throw Shooting Accuracy of Ninth Grade Boys. M.S. in Physical Education. 1963. 99 p. (R. K. Cutler)
Two parallel groups were randomly established from 50 grade 9 boys paired on the basis of a pretest of four 25-free-throw trials. The odd-even pretest reliability coefficient was .82. A 20-day controlled practice program was conducted with subjects shooting 50 free throws per day. One group shot at regulation goals and the other group shot at goals with a restrictive device inserted. The final test was in two parts which correlated .54. The group shooting at the restricted goal scored higher on the final test with mean differences of 2.74 and 2.24 (significant at the 10 and 13 percent levels). Therefore, the null hypothesis was not rejected at the 5 percent level.

357. MORRIS, Arlene Marie. The Effect of a Progressive Program of Exercise, Using the Exercycle, on the Strength of College Women. M.S. in Physical Education. 1963. 126 p. (M. R. Broer)
The subjects were women volunteers enrolled during the Winter Quarter of 1963. Two experimental groups rode the Exercycle 15 min. a day, 5 days a week for 6 weeks. The work group (N = 27) exerted maximum force in pushing and pulling on the handlebars and pushing the pedals trying to speed up the movements. The relaxed group (N = 16) rode with as little resistance as possible. A control group (N = 19) had completed their physical education requirement and did not have any scheduled activity classes. Cable Tension Strength Tests were employed to measure right elbow, left shoulder, trunk, left hip, right knee, and left ankle flexion and extension strengths before and after the exercise program. The work group improved significantly in elbow, trunk, and ankle plantar flexion and the increases in elbow and shoulder extension approached significance. The relaxed group improved significantly in

elbow flexion. The control group had a significant gain in trunk flexion strength and trunk extension approached significance. The work group improved significantly more than the relaxed group in shoulder and trunk flexion and more than the control group in shoulder and ankle plantar flexion. The relaxed group exceeded the mean improvement of the control group in hip extension and ankle plantar flexion strength. All mean changes in favor of the control group were statistically insignificant—an analysis of their activity showed that many were quite active. Subjects who were weaker initially gained more on all tests than those who were stronger initially in all groups.

358. MOYLE, Samuel A. An Analysis of Factors Underlying the Carry-Over of Individual Sports for Undergraduate Men at the University of Washington. M. S. in Physical Education. 1963. 74 p. (N. Kunde)

Questionnaires were sent to 212 randomly selected students enrolled in individual sports during the year 1959-60; 180 (85 percent) responded. A large number had participated in an activity before enrolling in a class at the University. Over 60 percent were still participating in at least one activity in which they had enrolled at the University. Lack of time, especially for academic study, was the most commonly reported reason for discontinuing or curtailing participation in sport. The most important factors promoting continuing participation in recreational sports were, in order, self-instruction, University physical education classes, and high school classes.

359. PHELAN, Clarence W., Jr. The Development of a Track and Field Pentathlon Scoring Table, 1963. M. S. in Physical Education. 1963. 95 p. (R. K. Cutler)

A scoring table was developed for a pentathlon consisting of the 100-yd. dash, high jump, broad jump, shot put, and 440-yd. run. The scoring table was established with 1,000 points equivalent to a six standard deviation range and with increased increments based on the formula: $Y = KX^2 - S$.

360. SAVAGE, P. Barry. Cardiorespiratory Changes in Selected Renton High School Male Students as Determined by Treadmill Performances Before and After Eleven Weeks of Varsity Wrestling Participation During the 1962 Season. M. S. in Physical Education. 1963. 123 p. (C. A. Mills)

The Critical Ratio applied to 12 variables collected during treadmill runs from 18 varsity wrestlers at Renton High School showed significant improvement in ventilation, total oxygen consumption per kilogram of body weight, and milliliters of oxygen per kilogram of body weight during the run. A mean increase of 23.35 sec. in run duration, decreased in four heart rate measures, and improvements in the other measures of cardiorespiratory efficiency were not significant.

361. STORSETH, Morris C. The Relationships Between the Scores Obtained on the National Physical Fitness Test, Other Selected Physical Fitness Tests, and Certain Cardiorespiratory Reactions of Secondary School Males. M. S. in Physical Education. 1963. 85 p. (R. K. Cutler)

Intercorrelations were computed between AAHPER Youth Fitness Test items, other selected physical fitness tests, and cardiorespiratory measures taken during treadmill runs as a basis for recommending that a new National Physical Fitness Test be created.

362. SWANBERG, Phillip H. The Investigation of Basketball Coaching Techniques Utilized in Meeting Environmental and Personal

Situations in Basketball Games in Selected High Schools in the State of Washington. M.S. in Physical Education. 1963. 107 p. (C. Peek)

Questionnaires were distributed to coaches in "AA" and "A" high schools in the state. Coaches were asked to indicate the techniques they used in meeting the specified environmental and personal situations. The returns indicated that the coach should adjust the style of play and organize warm-up drills to familiarize players with the court size and type of baskets on courts other than the home court. Players should know the game score and time remaining. Time outs should be used for rest and discussion of strategy. An assistant should chart statistics for the coach's use during the game. The coach should pattern his relationship with players according to his personality and philosophy. The coach should detect fatigue among players and substitute on the basis of individual circumstances and the game situation. The problems of partisan crowds and over-confidence should be dealt with in pregame meetings.

363. THOMAS, Judith Carol. The Effect of a Progressive Program of Exercise Using the Exercycle on the Development of Cardiorespiratory Endurance of College Women. M.S. in Physical Education. 1963. 82 p. (M. R. Broer)

Data were obtained from 61 volunteer women students enrolled during the Winter Quarter of 1963 at the University of Washington. All subjects were given the Harvard Step Test and measured for lung capacity with a wet spirometer before and after the exercise program. Subjects in the work and relaxed groups also had pre- and post-tests in which they rode the Exercycle for 15 min. and worked against the machine for three 30-sec. intervals. Pulse rates were taken with an electrocardiograph before the ride, 5 sec. before and at the end of each work period, at the end of the ride, and each minute during the 5-min. recovery. During the 6-week exercise program the control group had no scheduled activity; the relaxed group rode the Exercycle 15 min. per day, 5 days a week without resisting the machine, and the work group rode an equal amount but increased their 30-sec. periods of work against the machine from three to seven during the 15 min. The work group had a significant improvement in cardiorespiratory endurance, as measured by the Harvard Step Test, but not in lung capacity or in pulse rates, although the recovery rates decreased. The relaxed and control groups did not improve in cardiorespiratory endurance or lung capacity.

364. TODD, Rolland D. The Status of Adapted Physical Education Programs in Selected Senior High Schools of California, 1963. M.S. in Physical Education. 1963. 59 p. (R. K. Cutler)

A questionnaire concerning administrative problems and program offerings in adapted physical education was sent to select high schools in California. The returns were interpreted in terms of the existing laws pertaining to education in the State of California.

365. ULBRICKSON, Alven E. The History of Intercollegiate Rowing at the University of Washington through 1963. M.S. in Physical Education, 1963. 200 p. (J. A. Torney, Jr.)

A central record concerning intercollegiate rowing at the University of Washington from its origin through 1963 was prepared through documentary research and personal interviews. The events in and factors influencing the development of the rowing program were divided logically into three phases: (a) the early history and rise to national recognition before Alvin M. Ulbrickson became head coach in September 1927; (b) the events and factors from September 1927 to September 1945 when Pacific Coast Conference competition resumed after World War II; and (c) the modern history of rowing at the University since September 1945.

366. WARD, Paul E. The Effects of Isometric and Isotonic Exercises on Strength, Endurance, and Anthropometric Measurements. M.S. in Physical Education. 1963. 116 p. (E. Hughes)
Strength, endurance, and anthropometric tests were given before and after a 7-week training program. The anthropometric measurements included neck, shoulder, arm, chest, waist, hip, thigh, and calf girths, and height and weight. Three groups totalling 76 subjects were equated on the basis of the initial strength test. Subjects in two weight training classes trained with weights. Subjects in two more weight training classes trained with isometric exercises. Subjects in softball classes (control group) participated in softball. The softball group did not increase in strength, endurance, or anthropometric measurements. The weight training group showed a significant gain in strength, substantial but not significant changes in anthropometric measurements, and no increase in endurance. The isometric group gained in strength but not in endurance.

**Wayne State University, Detroit, Michigan** (P. Berlin)

367. ANDERSON, Jack R. Fitness Survey. M.Ed. 1963. 87 p. (P. Berlin)
The physical fitness of selected Detroit school children was surveyed with Rogers' Physical Fitness Index. Subjects were 551 boys and girls from 9 to 16 years of age in 17 schools of the City of Detroit Public School System. Ray data for each subject were converted to a PFI. Means were determined for each school, each district represented by the sample, and for the entire sample. In addition, mean scores were calculated in the separate test items for boys and girls of each age level. The average PFI was 79.45. A statistically significant difference was found between the districts with highest and lowest means. High-scoring age groups for boys were 13 and 15; the high scoring age group for girls was 11. One-fifth of the sample scored above 100; three-fifths scored between 99 and 61, and one-fifth of the sample scored below 61.

368. HURD, Milton. Form Patterns in the Running Front Approach Characteristic of Great Divers. M.Ed. 1963. 109 p. (P. Berlin)
Form patterns of springboard divers were rated from slow motion loop films of the five 1960 Olympic three-meter finalists. A special check list was prepared with which 22 coaches and persons concerned with swimming and diving analyzed the loops. Percentages of responses were calculated for each item and for each diver. Individual differences in form were evident without any adverse functional effects.

**University of Wisconsin, Madison, Wisconsin** (J. G. Wolf)

369. ADELSON, Sheldon I. Evaluation of College and University Student Knowledge of and Use of Health Services and Facilities. M.S. in Education (Health). 1963. 71 p. (W. H. Southworth)
The two test forms were developed by a committee of the American College Health Association and were administered to 2,400 students in 15 colleges and universities. The tests were revised for publication by the Association.

370. ALBERT, David H. Health Evaluation Study of Junior High Schools in Janesville, Wisconsin. M.S. in Education (Health). 1963. 98 p. (W. H. Southworth)
The Shaw-Troyer Health Education Test and the Denver Health Interest

inventory were administered to four grade 8 and four grade 9 classes in each of the two schools. The pupils scored higher in all areas of health application than they did in the areas of health information. Girls had slightly higher averages in all areas than boys. The similarities and differences of boys and girls in health interests were noted.

371. ATWATER, Anne E. The Development and Use of Skill Element Measures in the Teaching and Evaluation of Projectile Skills at the University of Wisconsin. M.S. in Physical Education. 1963. 166 p. (M. Liba)
Professor Ruth B. Glassow initiated the study of the trajectories of projectiles used in sports as a basis for sound teaching and evaluation of projectile skills. Another primary concern was the development of practical and useful tests of specific sport skills. The study of kinesthetic perception as a basis for controlling force and direction was initiated in the early 1940's. The development of concepts concerning teaching skill elements and evaluating projectile skills resulted from continual emphasis on the need for practical application of basic principles concerning learning and performance.

372. BECKER, John W. The Mechanical Analysis of a Football Place Kick. M.A. in Physical Education. 1963. 84 p. (J. G. Wolf)
The study was based on motion pictures taken of James Bakken, kicking specialist of the University of Wisconsin football team. Front and side views were taken to determine body position and joint action as the ball was kicked. The position of the body's center of gravity, action of the body segements, angle of approach, and velocity of the kick were the essential elements in the accuracy and distance of the place kick.

373. D'ANGELO, Janeen. An Approach to the Portrayal of Emotion in Dance. M.S. in Physical Education (Dance). 1963. 59 p. (M. Fee)
Classic and contemporary theories of emotion were reviewed as a basis for providing biological credibility in portraying specific emotions choreographically so these emotions may be interpreted universally. Specific suggestions were presented for portraying four emotions through movement.

374. ENGE, Marion K. Evidence of the Need for Family Life Education. M.S. in Education (Health). 1963. 60 p. (W. H. Southworth)
Library research was used to summarize current knowledge on preadolescent and adolescent dating, sex practices of adolescents, early marriage, illegitimacy, venereal disease, homosexuality, and masturbation. The study concluded that there is a need for a comprehensive program of family life education from the kindergarten through grade 12 based upon educationally sound principles and specific objectives. Evidence was presented that schools can provide this type of instruction.

375. FORTNEY, Virginia L. The Swinging Limb in Running of Boys Ages Seven Through Eleven. M.S. in Physical Education. 1963. 166 p. (R. Glassow)
Cinematographical analysis of twelve boys aged 7 - 11 indicated that the older boys and better runners tended to flex the knee more and bring the heel closer to the buttock as the trailing limb left the ground. They also flexed the hip and knee more as the free limb moved forward so the thigh came closer to the horizontal and the leg was inclined more toward the ground.

376. FOSTER, Margaret V. The Development of a Method of Swimming Instruction Based on Efficiency of Propulsion Including a Com-

parative Study of Fear Reduction. M. S. in Physical Education. 1963. 122 p. (L. E. Halverson)
Proficiency tests for the front crawl and elementary back stroke were developed. These were quickly and easily administered and were valid and reliable measures of achievement. In order to determine which method was more conducive to reducing fear in beginning swimmers, an experimental group was taught with primary emphasis on developing swimming proficiency and a control group was taught with the usual emphasis on correct swimming style. The combined test scores for the experimental group were significantly higher than those for the control group.

377. GORMAN, Margaret R. Perceptual Training in Education. M. S. in Education (Health). 1963. 107 p. (W. H. Southworth)
The experimental and control groups were given a Primary Mental Abilities Test at the beginning and end of a 6-month period. The experimental group received visual training in daily postural-perceptual exercises. This resulted in the experimental group having a significantly greater gain than the control group in the Primary Mental Abilities Test.

378. GRITZMACHER, Glenn S. Library Materials for Recreation. M. S. in Education (Recreation). 1962. 35 p. (H. C. Hutchins)
A comprehensive and useful guide to source materials for research in recreation was developed. This covered reports of research, research aids, indexing and abstracting tools, periodicals, bibliographies, resources in particular libraries, government publications, statistical sources, and other sources. (Available from American Recreation Society for $1.50 each.)

379. HICKMAN, John A. Social Class, Attitude Toward Physical Activity, and the Physical Activity of College Students. M. S. in Physical Education. 1963. 128 p. (G. S. Kenyon)
The Hollingshead Two-Factor Index of Social Position, Richardson Attitude toward Physical Fitness and Exercise Scale (Form B), and a specially prepared physical activity inventory were administered to 149 randomly selected college students majoring in physical education, education, and liberal arts. Two-way analyses of variance were applied to the data. Men majors had a slightly lower social class background than women majors or students in education and liberal arts. The latter two groups had similar social backgrounds. Men and women majors had high positive attitudes toward physical fitness and exercise but students in education and liberal arts had like attitudes. Male upperclassmen in all three areas were more active than graduate students. Men majors were more active than men in education or liberal arts. Undergraduate men and women majors were more active than graduate students. Men majors in physical education were more active than women majors.

380. JOSEPHSON, Mary R. An Introductory Film Lesson in Modern Dance: A Record of Production and Use. M. S. in Physical Education (Dance). 1963. 118 p. (M. Fee)
The purpose was to determine the feasibility of using a filmed lesson in dance with senior high school students of varying experience. A modern dance lesson was composed and adapted to film. This film was later video taped.

381. KENZIE, Leota P. A Comparison of the Effectiveness of Two Methods of Instruction on the Performance of First Grade Children in Selected Motor Activities. M. S. in Physical Education. 1963. 71 p. (L. E. Halverson)
The performance of grade 1 children in a 30-yd. dash, standing broad

jump, and overarm throw for distance were compared following both movement exploration of conventional game-centered methods of instruction and instruction by physical education or classroom teachers. Students who had a program of instruction by physical educators were significantly better in jumping and throwing than those instructed by classroom teachers. Boys and girls did not differ in jumping ability but did differ in throwing ability. The girls in both groups differed significantly in throwing ability.

382. MALINA, Robert M. Performance Changes in a Speed-Accuracy Task as a Function of Practice Under Different Conditions of Information Feedback. Ph. D. in Physical Education. 1963. 238 p. (G. L. Rarick)

The purpose was to determine changes in the speed and accuracy of the overarm throw under different conditions of information feedback. Special electronic equipment made it possible to supply or withhold information on either the accuracy or the velocity of performance (or both) to the subjects under practice conditions. Fifty adolescent male subjects were randomly assigned to five groups; each group trained for 4 weeks under a particular condition of information feedback. The results showed that changes in speed and accuracy of performance were significantly influenced by the type of feedback information given during the training period.

383. MURRAY, Ruth E. The Process of Thematic Unity in Dance. M. S. in Physical Education (Dance). 1963. 160 p. (M. Fee)

A philosophical discussion is presented defining and interpreting the interrelationships between the terms theme, thematic idea, and thematic structure as related to an actual dance theme.

384. SHEETS, Maxine. The Phenomenology of Dance. Ph. D. in Physical Education (Dance). 1963. 208 p. (L. O. Kloepper)

The purpose was to explicate the nature of the illusion of force created by dance from the phenomenological point of view. The author examined the phenomenological philosophies of Suzanne Langer, Jean-Paul Sartre, and Maurice Merlean-Ponty as a means for analyzing and interpreting the significance of dance, particularly the following phenomenological structures: the time and space of the illusion of force, qualities of movement, abstraction, symbolic expression, and dynamics in dance composition.

385. STEPHENS, Stephen L. The Personal Problems of Athletes and Non-Athletes as Seen by Themselves and Their Parents. M. S. in Physical Education. 1963. 135 p. (G. S. Kenyon)

Forty-five athletes from the freshmen, sophomore, and varsity basketball teams and 45 non-athletes randomly sampled from the remainder of the classes were given the Mooney Problem Check List (Form H) to determine problems of greatest importance to them. The parents were also given the Check List and were asked to check those problems they felt were of concern to their sons. Chi square was used to test for significant differences among groups. The differences between the groups were generally moderate to weak. Relationships were low or nonexistent when problems of students were compared with those attributed to them by their parents.

386. STRADER, Janet. The Communication of Humor Through Movement: Implications for Choreography. M. S. in Physical Education (Dance). 1963. 89 p. (M. Fee)

A philosophical discussion of humor in dance was based on a theory of communication.

387. TARBELL, Beatrice. Changes in Expressed Reactions of Superior High School Students to Physical Education Over a Two Year Period. M.S. in Physical Education. 1963. 74 p. (G. L. Rarick)
Data were obtained from 120 superior high school students in the Research and Guidance Laboratory for Superior Students, University of Wisconsin, regarding their expressed reactions to physical education and the changes in their reactions after a period of two years. The results showed that approximately 60 percent would elect physical education if it were not required. Little, if any, change occurred in their expressed reactions over a period of two years. The chief benefits listed by these students were contributions to physical fitness and improvement of sports skills. Expressed reactions to physical education were not reflected in the pattern of daily participation in sports and non-sports activities.

388. THORNES, M. Ann Brown. An Analysis of a Basketball Shooting Test and Its Relation to Other Basketball Skill Tests. M.S. in Physical Education. 1963. 107 p. (M. Liba)
The Wisconsin floor shooting test was analyzed to determine its reliability, the size and shape of floor target, and relationship to other shooting tests and measures of basketball fundamentals, and to study certain aspects of validity. The findings indicated that the test was reliable and valid but that the existing target needed revision. Ability, as measured by the floor shooting test, was significantly related to tests of other ball handling skills but not to body control skills.

389. YETTER, Henry. A Test of Wrestling Aptitude: A Preliminary Exploration. M.S. in Physical Education. 1963. 54 p. (G. S. Kenyon)
The major components of wrestling were identified and test items were deduced to represent each component. The efficacy of the test items was determined by administering them to 84 varsity high school wrestlers who participated in the 1963 Wisconsin State Wrestling Tournament and 124 junior high school boys. The test items were takedown, switch, and ride. Subjects were tested on two consecutive days to determine reliability. Validity was established logically and by empirical or concurrent validation using chi square and rank order correlation. Each test item showed satisfactory reliability and content validity but the attempt to establish validity was unsuccessful.

390. WESENER, Arthur A. Job Analysis of Supervisors of Elementary School Physical Education in Wisconsin. M.S. in Physical Education. 1963. 128 p. (G. S. Kenyon)
The purposes were to identify the duties of supervisors of elementary school physical education; to determine to what extent the identified duties were being performed in Wisconsin; and to analyze the duties regarding importance, difficulty, frequency, and time required. Twenty-six full-time supervisors of elementary school physical education in Wisconsin were interviewed. The duties of the Wisconsin elementary school supervisors were similar to those identified in the literature. A majority of supervisors considered their duties important and performed them without any apparent difficulty. The greater part of the supervisors' time was spent in administration, instruction, and direct supervision.

# PERIODICALS REVIEWED

*Acta Chirurgica Scandinavica
Acta Medica Scandinavica
*Acta Orthopaedica Scandinavica
*Acta Paediatrica
*Acta Physiologica Scandinavica
*Aerospace Medicine
*Amateur Athlete
*American Heart Journal
American Journal of Anatomy
American Journal of Cardiology
*American Journal of Clinical Nutrition
*American Journal of Diseases of Children
*American Journal of Human Genetics
American Journal of Hygiene
*American Journal of the Medical Sciences
American Journal of Medicine
American Journal of Orthopsychiatry
American Journal of Physical Anthropology
*American Journal of Physical Medicine
American Journal of Physiology
*American Journal of Psychiatry
*American Journal of Psychology
*American Journal of Public Health and the Nation's Health
*American Journal of Surgery
American Recreation Journal
*American Review of Respiratory Diseases
Anatomical Record
*Annales Medicinae Internae Fennize
Annals of Applied Biology
*Annals of Human Genetics
*Annals of Internal Medicine
*Annals of Physical Medicine
Arbeitsphysiologie
*Archives of Environmental Health
*Archives of Internal Medicine
*Archives of Physical Medicine and Rehabilitation
*Archives of Surgery
Athletic Journal
Australian Journal of Experimental Biology and Medical Science
*Biomedical Laboratory
*Biophysics
*British Heart Journal
*British Journal of Industrial Medicine
*British Journal of Nutrition
*British Journal of Preventive and Social Medicine
*British Journal of Psychiatry
*British Journal of Psychology
British Medical Bulletin
*British Medical Journal
*Bulletin of the Johns Hopkins Hospital
Bulletin of the Los Angeles Neurological Society
*Bureau of Medicine and Surgery
*California Clinician
*California Journal of Educational Research
California Medicine
Camping Magazine
Canadian Journal of Pharmacology and Physiology
*Canadian Journal of Psychology
*Canadian Journal of Public Health
*Canadian Medical Association Journal
*Cancer Research
*Child Development
*Circulation
Circulation Research
*Citrus in Medicine
*Clinical Science
*Current Therapeutic Research
*Danish Medical Bulletin
Diabetes
*Educational and Psychological Measurements
*Ergonomics
Experimental Cell Research
*Federal Aviation Agency Report
*Federation Proceedings
Genetic Psychology Monographs
*Geriatrics
*GP
*Growth
*Henry Ford Hospital Medical Bulletin
*Human Biology
*Indian Journal of Medical Research

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Periodicals marked with an asterisk have research reports listed in the this issue of Completed Research.

*Industrial Medicine and Surgery
International Journal of Health Education
*Internationale Zeitschrift für Angewandte Physiologie
*Journal of Abnormal and Social Psychology
*Journal of the American Dietetic Association
*Journal of the American Medical Association
*Journal of the American Osteopathic Association
*Journal of the American Physical Therapy Association
Journal of Anatomy
*Journal of Applied Physiology
*Journal of Applied Psychology
Journal of the Association for Physical and Mental Rehabilitation
*Journal of Bone and Joint Surgery
*Journal of Chronic Diseases
*Journal of Clinical Investigation
*Journal of Clinical Psychology
*Journal of Comparative and Physiological Psychology
Journal of Educational Psychology
*Journal of Educational Research
*Journal of Environmental Health
Journal of Experimental Biology
Journal of Experimental Education
Journal of Experimental Medicine
*Journal of Experimental Psychology
*Journal of General Physiology
*Journal of General Psychology
*Journal of Genetic Psychology
Journal of Gerontology
*Journal of Health and Human Behavior
Journal of Heredity
*Journal of Home Economics
*Journal of Laboratory and Clinical Medicine
*Journal of the Maine Medical Association
Journal of Nervous and Mental Disease
Journal of Neurophysiology
*Journal of Nutrition
*Journal of Occupational Medicine
Journal of Pediatrics
*Journal of Personality
Journal of Physical Education
Journal of Physiology
*Journal of Psychology
*Journal of School Health
*Journal of Social Psychology
*Journal of Sports Medicine and Physical Fitness
Journal of Teacher Education
Journal of Tropical Medicine
*Lancet
*Medical Journal of Australia
*Mental Hygiene
Military Medicine
Monographs of the Society for Research in Child Development
National Conference of Social Work
National Society for the Study of Medical Research
Nation's Schools
*New England Journal of Medicine
*New York State Journal of Medicine
*Nutrition Abstracts and Reviews
Nutrition Reviews
Parks and Recreation
Peabody Journal of Education
*Pediatrics
*Pediatrics - Supplement
*Perceptual Motor Skills
Phi Delta Kappan
Philosophical Studies
Physical Educator
Physiological Reviews
Physiologist
*Postgraduate Medicine
Practitioner
*Proceedings of the Nutrition Society
*Proceedings of the Society for Experimental Biology and Medicine
Psychoanalysis and Psychoanalytic Review
Psychological Bulletin
*Psychological Monographs General and Applied
Psychological Reviews
Psychosomatic Medicine
*Public Health Reports
Quarterly Journal of Experimental Physiology and Cognate Medical Sciences
Quarterly Journal of Experimental Psychology
Quarterly Review of Biology
*Recreation
Rehabilitation Record
Research Bulletin of the NEA
*Research Quarterly, AAHPER
*Revue Canadienne de Biologie
Royal Society of Health Journal
Safety Education
*Scandinavian Journal of Clinical and Laboratory Investigation

Scholastic Coach
*School of Aerospace Medicine
School Review
*Science
*Sechenov Physiological Journal of the USSR
Social Science Research Council
Sociological Abstracts
*Sociological Review
Sociology and Social Research
Sociometry
*South African Journal of Medical Science
Southern Medical Journal
*Soviet Research in Nutrition
*Surgery
*Surgical Clinics of North America
*Swimming Pool Age
*Technical Documentary Report, Holliman Air Force Base
*Technical Documentary Report, Wright Patterson Air Force Base
Thorax
Today's Health
*Ulster Medical Journal
*U. S. Army Medical Research Laboratory Report
Western Journal of Surgery, Obstetrics and Gynecology

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